

**RECORD IN DISTRICT COURT**  
**(IN TWELVE VOLUMES)**

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**District Court of the United States,  
DISTRICT OF MASSACHUSETTS.**

**IN EQUITY.**

**No. 301**

**THE UNITED STATES OF AMERICA**

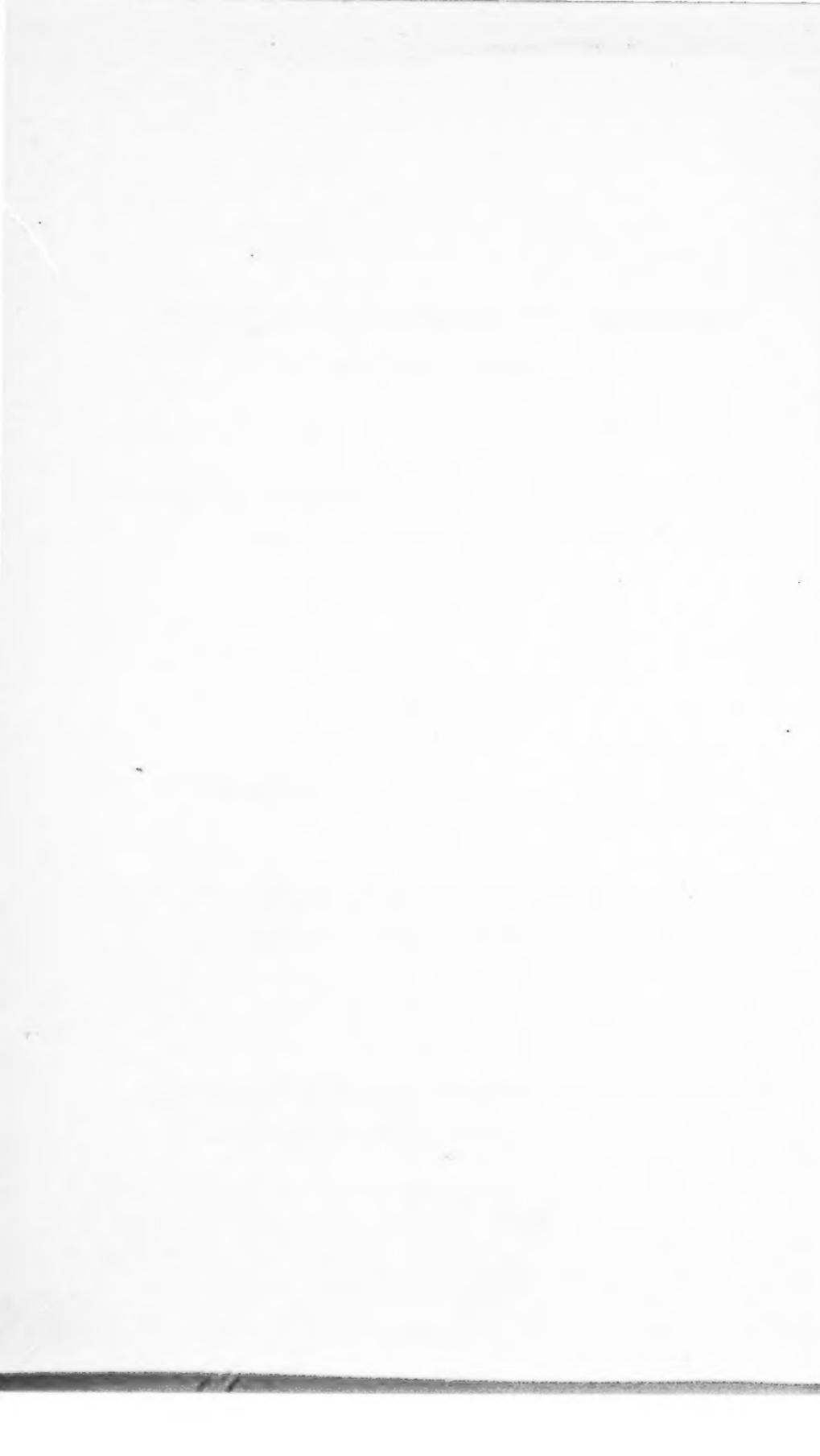
**vs.**

**UNITED SHOE MACHINERY COMPANY,  
OF NEW JERSEY, AND OTHERS.**

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**VOLUME V—TESTIMONY BEFORE EXAMINER,  
PLAINTIFF'S AND DEFENDANTS'.**

**PATENTS.**

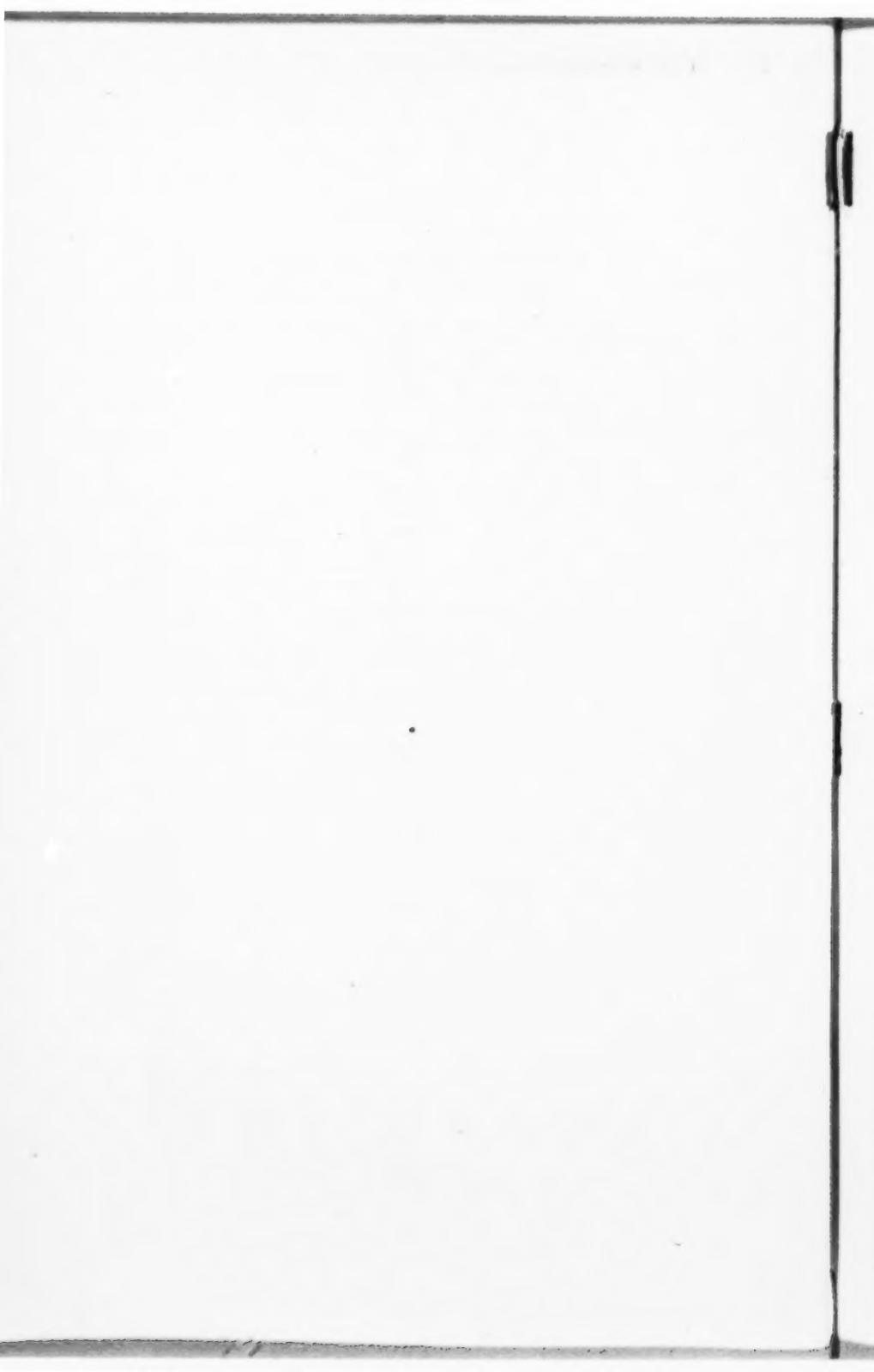


# INDEX.

## TESTIMONY BEFORE EXAMINER.

*(This index relates only to Volume V.)*

Name	Examination	Page
Bannican, Lawrence	Direct . . . . .	2823
" "	Cross . . . . .	2829
" "	Direct . . . . .	(Resumed) 2835
" "	Cross . . . . .	2835
Browne, Arthur S.	Direct . . . . .	2836 (123)
" "	Cross . . . . .	2826 (141)
Chapman, Charles McC.	Direct . . . . .	2140
" "	Cross . . . . .	2148
" "	Direct . . . . .	(Resumed) 2195
" "	Direct . . . . .	" 2793
" "	Direct . . . . .	2836 (91)
" "	Cross . . . . .	2836 (96)
" "	Direct . . . . .	2836 (119)
Dodge, John J.	Direct . . . . .	2126
" "	Cross . . . . .	2132
" "	Direct . . . . .	(Resumed) 2139
" "	Cross . . . . .	2139
Howard, Nelson W.	Direct . . . . .	1998
" "	Cross . . . . .	2082
" "	Direct . . . . .	(Resumed) 2090
" "	Cross . . . . .	" 2099
" "	Direct . . . . .	" 2099
" "	Cross . . . . .	2112
" "	Direct . . . . .	" 2239
" "	Cross . . . . .	2678
" "	Direct . . . . .	" 2769
" "	Cross . . . . .	2782
" "	Cross . . . . .	2836 (2)
" "	Direct . . . . .	2836 (67)
" "	Cross . . . . .	2836 (81)
Jones, Charles H.	Direct . . . . .	2164
" "	Cross . . . . .	2181
" "	Direct . . . . .	(Resumed) 2183
" "	Cross . . . . .	" 2184
" "	Direct . . . . .	" 2185
" "	Cross . . . . .	2186
Warren, George E.	Direct . . . . .	2836 (154)
" "	Cross . . . . .	2836 (163)
" "	Direct . . . . .	(Resumed) 2836 (166)
" "	Cross . . . . .	" 2836 (168)
" "	Direct . . . . .	2836 (169)



District Court of the United States,  
DISTRICT OF MASSACHUSETTS.

IN EQUITY.

No. 301 (C. C. 911).

UNITED STATES OF AMERICA

v.

UNITED SHOE MACHINERY COMPANY, OF NEW JERSEY,  
ET AL.

EVIDENCE FOR THE UNITED STATES.

TAKEN PURSUANT TO ORDER OF COURT, ENTERED JUNE 27, 1913,  
BEFORE ME,

CHARLES K. DARLING,

*Special Examiner.*

BOSTON, MASS., July 14, 1913.

Present:

WILLIAM S. GREGG, Esq., *Assistant to the Attorney General,*  
ALLEN WEBSTER, Esq., *Special Assistant to the Attorney General,*

*of Counsel for Complainant;*

FREDERICK P. FISH, Esq., and CHARLES F. CHOATE, Jr., Esq.,  
*of Counsel for Defendants.*

Pursuant to the order of the court entered June 27, 1913, page  
1902 of this record, the taking of testimony with respect to patents  
was resumed on the date above written, at room 132, Federal  
Building, Boston, Massachusetts, before Charles K. Darling, Esq.,  
as Special Examiner.

By direction of the examiner and agreement of counsel, the  
hours of sitting are to be from 10 A. M. to 3.45 P. M. daily.

DEPOSITION OF NELSON W. HOWARD (*recalled*).

*Direct Examination by ALLEN WEBSTER, Esq., of Counsel for Complainant.*

*Int.* 1208. Mr. Howard, how long have you had charge of the patent department of the United Shoe Machinery Company?

*Ans.* Since its organization in February, 1899.

*Int.* 1209. And prior to that time, how were you occupied?

*Ans.* For some four months before that I was with the Mackay Shoe Machinery Company, and previously to my connection with that company I was for nearly three years in the office of the firm of Fish, Richardson & Storrow, the firm which is now named Fish, Richardson, Herrick & Neave.

*Int.* 1210. So that you have had how many years experience in patent matters?

*Ans.* Something over fifteen years.

*Int.* 1211. And has the larger portion of your time and labor been devoted to patents relating to shoe machinery?

*Ans.* Yes, sir.

*Int.* 1212. What are your duties in your employment, as having charge of the patent department of the United Shoe Machinery Company?

*Ans.* The duties are quite varied. I don't know that I could mention them all without taking considerable time, but in general I have charge of the soliciting of the patents of the company, except the patents on Goodyear machines. I have supervision of the work of my associates in preparing and prosecuting the application for patents; I examine patents and applications that are submitted for purchase, examine our experimental machines to determine whether or not they are free from infringement of patents owned by others, and frequently confer with officials of the company in connection with various patent questions which come up from time to time on matters in connection with which patents are discussed.

*Int.* 1213. Are you familiar with all the patents owned by the United Company?

*Ans.* I am more or less familiar with all of them, particularly those patents on machines which are in the departments in which the machines are classified on which I do the patent soliciting.

*Int.* 1214. You may state what departments you refer to in the last answer.

*Ans.* I do the patent soliciting on machines in the lasting, heel-ing, metallic eyeletting and general departments, with a few exceptions.

*Int.* 1215. Does that take in everything other than the Goodyear departments?

*Ans.* Practically.

*Int.* 1216. Are you also familiar with patents owned by the companies affiliated with the United Company?

*Ans.* I do not recall any to which my previous answer would not apply.

*Int.* 1217. Then, as I understand you, you think you are familiar with those patents?

*Ans.* I cannot say that I have them all in mind, but I am cer-tainly more or less familiar with those patents.

*Int.* 1218. In response to questions by counsel for defence, you have testified with reference to many patents and machines; kindly state whether any of the patents of which you have testified relate to the cutting of soles for shoes.

*Ans.* May I ask you to define "cutting of soles" a little more clearly?

*Int.* 1219. Well, I mean cutting out soles for shoes.

*Ans.* Shaping them?

*Int.* 1220. No; simply original cutting them out. It may be a sole-cutting or dieing machine, or anything designed to cut the sole out,—the first operation of cutting the soles.

*Ans.* Certainly; I understand you now. The machine of the Breach Manufacturing Company was a machine particularly in-tended for cutting soles.

*Int.* 1221. It is and has been for many years common to cut or die out soles with a die, has it not?

Mr. CHOATE. I think that is rather a leading question, Mr. Webster.

Mr. WEBSTER. I will change it if you want.

Mr. CHOATE. Perhaps, if you will pursue a uniform practice, you will observe my objection to leading.

Mr. WEBSTER. That is a thing that we did not go into first. It was originally brought out before, as I recollect it.

The WITNESS. Shall I answer the question, Mr. Choate?

Mr. CHOATE. I understand Mr. Webster was going to change the form of the question.

Mr. WEBSTER. If you insist on it.

Mr. CHOATE. Yes, I will.

Mr. WEBSTER. I will do it out of courtesy to you.

Int. 1222. What was the old original method of cutting out soles?

*Ans.* Soles have been died out, and they have been shaped on sole-rounding machines.

Int. 1223. For how long a time, so far as you know, have they been died out?

*Ans.* I could not undertake to say, without investigating.

Int. 1224. Will you state approximately?

*Ans.* Well, I should suppose for over twenty years certainly.

Int. 1225. Dieing out a sole is somewhat similar to cutting cookies, isn't it? That is to say, you have a die and press it down through the material to be cut?

*Ans.* I think I am more impressed by the dissimilarity than by the similarity of the two operations.

Int. 1226. In dieing out a sole, you have a die, the shape of a sole, as I understand it; you place the die on the sole leather, and apply pressure. In that way the sole is cut out. Is that correct?

*Ans.* Will you kindly read the question?

[*Question read by stenographer.*]

*Ans.* That is correct, so far as it goes.

Int. 1227. The sole-cutting machines you have testified about in your cross-examination are not what is known as dieing-out machines, are they?

DEPOSITION OF NELSON W. HOWARD, RECALLED. 2001

*Ans.* The machine of the Breach Manufacturing Company was certainly not a machine for forcing a die through a side or a piece of sole leather.

*Int.* 1228. In your cross-examination, have you testified, so far as you recollect, with reference to lasting machines or patents relating to lasting machines?

*Ans.* Yes, sir.

*Int.* 1229. Will you kindly testify what lasting machines or patents you have testified about?

*Ans.* The patents —

*Mr. CHOATE.* Does not the record show that, Mr. Webster?

*Mr. WEBSTER.* It is rather uncertain. I thought we could get it down to a concise statement.

*Mr. CHOATE.* Well, the record gives the numbers of the patents. That ought to be pretty definite.

*Mr. WEBSTER.* Of course it refers to a large number of cases. I thought he would have it in mind and it might shorten the record a good deal.

*Mr. CHOATE.* You can refer to your record, Mr. Howard, to refresh your recollection if you want to.

*Mr. HOWARD.* I can answer the question. Shall I?

*Mr. CHOATE.* Yes.

[*Question repeated by stenographer.*]

*Ans.* I testified in regard to the patents acquired from the Seaver Process Lasting Company.

*Int.* 1230. If that is a printed copy of the record, will you give the page? What page is that?

*Ans.* It is mentioned on page 36 of the petition.

*Int.* 1231. I thought you had a printed copy of the evidence.

*Ans.* Pardon me. This is the petition [*referring to the printed book before the witness*].

*Int.* 1232. Do you have in mind what welting machines you have testified about?

*Mr. CHOATE.* What kind of machines?

*Mr. WEBSTER.* Welters.

*Ans.* I testified in regard to the welters of the Globe Sewing

Machine Company and the weler of the Bay State International Shoe Machinery Company.

*Int.* 1233. I notice on page 623 of the printed record you say in answer to question 637 that "it was believed it would be possible to use a thinner, less substantial and less expensive insole than could be used with the present commercial type of welting machine, that is, a machine having but one thread inside the channel". Will you kindly state what you had reference to in the use of the term "present commercial type of welting machine"?

*Ans.* I had reference to the United Company's welt and turn machine. Your question reminds me that I also testified about a machine acquired from Rice and La Chappelle, to which your quotation from the record refers.

*Int.* 1234. Did any of the welting machines to which you made reference in your cross-examination go into use?

*Ans.* The lockstitch weler of the Globe Sewing Machine Company was used to a limited extent. The weler of the Bay State International Shoe Machinery Company was used to a small extent in England. The weler which we acquired from Rice and La Chappelle was only an experimental machine.

*Int.* 1235. Then the only welters to which you have testified in your cross-examination that went into use in the United States was the weler you have referred to as the Globe weler, as I understand you?

*Ans.* You refer now to machines to which I testified?

*Int.* 1236. Yes.

*Ans.* I believe that is correct.

*Int.* 1237. You say that the Globe weler went into use to a limited extent. Will you kindly explain what you mean by "a limited extent"?

*Ans.* I mean that a comparatively small number were used. I don't know the exact number, but it may have been thirty or forty.

*Int.* 1238. Will you kindly state the period of time when the Globe weler was in use?

*Ans.* I believe it was in use for several years preceding the purchase of the Globe Company's patents by the United Company.

*Int.* 1239. And did it go out of use after the purchase?

*Ans.* The demand for lockstitch welters ceased entirely within a year or two after the acquisition of the Globe Company's patents by the United Company, as it was found that a lockstitch was unsatisfactory for the inseam.

*Int.* 1240. As I recollect, you, on cross-examination, testified that patents were acquired by the United Company at the time of the purchase of the Globe and Bay State and Rice and Chappelle properties. Will you kindly state whether any of those patents related to the construction of what you refer to when you speak of the "present commercial type of welting machine"?

[*At the request of Mr. Choate the question was repeated by the stenographer.*]

*Ans.* I think that question is not very clear, Mr. Webster.

**Mr. WEBSTER.** If you will state in what respects you do not understand it, I will endeavor to explain.

The WITNESS [*to the stenographer*]. Will you read it?

[*Question repeated by stenographer.*]

The WITNESS. Perhaps I can explain my difficulty best by inquiring whether you mean to inquire whether any inventions of those patents are embodied in the present commercial machines?

**Mr. WEBSTER.** You may answer it in that way if you wish.

The WITNESS. That is what the question means, then?

**Mr. WEBSTER.** Not necessarily, but if you wish you may answer it giving the question that interpretation.

The WITNESS. The question is limited to welting machines, and it does not include outsole stitchers?

**Mr. WEBSTER.** The present question is limited to welting machines,—of the type referred to by you as the present commercial welting machine. [*To Mr. Fish:*] It may be that you would stipulate upon some of these points.

**Mr. FISH.** I would stipulate on most anything this warm weather.

**Mr. WEBSTER.** I want you to tell us what patents you have on the welter. You are going to tell us I presume before you get through.

**Mr. FISH.** Do you mean on all other machines, too?

Mr. WEBSTER. Oh, no; we don't need to go into any labyrinth.

Mr. FISH. If you will make a memorandum of just what you want, Mr. Choate and I will talk it over.

Mr. WEBSTER. If we have time enough and work hard enough, we can find out what patents you have on the welter. You know what you have and sooner or later you are going to tell us, and it might save time for the parties, the counsel and the court to let us know right now.

The WITNESS. Are you ready for me?

Mr. WEBSTER. I am, yes.

The WITNESS. The welter of the Globe Sewing Machine Company,—the lockstitch welter of the Globe Sewing Machine Company,—was covered by no patents so far as I recollect, on inventions now in commercial use, the reason being as I have explained that the demand for a lockstitch welter ceased shortly after the acquisition of the Globe Company's patents. If the demand for lockstitch welters had continued, I have no doubt that a machine incorporating many and possibly all of the features of the Globe machine would have been put out by the United Company. The Globe machine was superior to the lockstitch welter which we were just putting out at that time, because the shuttle thread was laid in the channel instead of on the welt as was the case in the machine which we were putting out. It was therefore possible in the use of the Globe machine to use a shuttle thread much larger than the needle thread which was in the operation of the Globe machine laid in the channel and pulled only slightly into the stock. This was a far better method of sewing welts by a lockstitch, because when the shuttle thread was laid on the welt there was much greater liability of cutting through the "between substance", so called, and damaging it. That machine also had a marked feature of superiority —

*Int.* 1241. You are referring now to the Globe machine?

*Ans.* I am speaking now of the Globe machine, the Globe lockstitch welter. That machine also had a marked superiority over the lockstitch welter which the United Company had just begun to put out —

Mr. CHOATE. Speaking now as of the time of the purchase?  
The WITNESS. Certainly.

*Int.* 1242. Insert the date right in there, if you can.

*Ans.* I think it was February, 1901.

Mr. CHOATE. Yes.

[*Ans. continued:*] That machine also had a marked superiority over the lockstitch welter which the United Company had just begun to put out in that the welt support carrying the welt guide was movable about the same axis of oscillation as the needle and awl. So that there was assurance that the welt would always be presented in such location with reference to the work that the needle would enter the groove in the welt. These two features of superiority, together with others of less striking importance, would undoubtedly have been adopted in the United Company's lockstitch welting machine had it not been for the fact that shortly after the acquisition of the Globe Company's patents shoe manufacturers decided that they did not desire to sew the inseam by a lockstitch, and they refused to use lockstitch welters. In the year ending March 1, 1902, we put out only nine lockstitch welters, and six were returned; in the year ending March 1, 1904, we did not put out any machines, and five were returned. By "any machines" I mean of course lockstitch welting machines.

*Int.* 1243. Of the Globe type?

*Ans.* Of any type.

*Int.* 1244. And were those you put out of the Globe type?

*Ans.* The ones to which I have just referred, in stating the output and return, were machines known as Universal inseam sewing machines, that is, the United Company's commercial lockstitch welting machines. Referring now to the welter of the Bay State International Shoe Machinery Company —

*Int.* 1245. I beg your pardon. The question did not go into that. As I recollect, you said none of those went into use in the United States.

*Ans.* Very well. Passing then to the machine acquired from —

Mr. CHOATE. Wait a moment. The question was, whether any

of these patents were involved or used in the present commercial type of welter. That is what you are answering?

Mr. WEBSTER. You are right. I should suppose he could answer the question briefly without going into all this detailed explanation.

*Int. 1246.* If you can do so, I suggest that the rest of your answer you answer briefly instead of trying to analyze.

*Ans.* The welt-sewing machine of the Bay State International Shoe Machinery Company, as it was put out in England, was a large — was a very unsatisfactory machine as compared with the welter then being put out by the United Shoe Machinery Company. The Bay State machine embodied a series of efforts to avoid patents owned by the United Company. In the machine representing the final stage of these efforts, the stitch was set by the needle through the —

Mr. CHOATE. May I interrupt you just a moment? Did you notice that the question is whether any of these patents which you have named are involved in the present commercial machine as you have defined it?

The WITNESS. I have that in mind, and I am endeavoring to explain why the inventions of these patents were not embodied in our machines.

Mr. CHOATE. I do not know whether you want to know that or not.

Mr. WEBSTER. I have suggested before that he might come to the point of answering more briefly rather than analyze the machine.

Mr. CHOATE. If none of them were, answer it no and we will take it up in recross-examination.

*Ans.* Then I will answer, as to the welting machine of the Bay State International Shoe Machinery Company, that so far as I know no patented inventions incorporated in that machine are embodied in the present commercial welting machine of the United Company.

Mr. CHOATE. You mean by "present commercial welting machine" the one being put out today?

The WITNESS. I think when I answered the question to which Mr. Webster directed my attention I meant the machine which was

being put out at the time of the Rice and La Chappelle acquisition, but I am now answering as of the present day. As to the machine acquired from Rice and La Chappelle, as I have previously testified, that machine has been experimented with by inventors of the United Company, but it has not yet been conclusively determined that the extra thread called for by the patents on that machine will be of commercial advantage, and the invention has not as yet been adopted by the United Company.

*Int.* 1247. I think, Mr. Howard, if you will kindly explain to the court just what you mean by "commercial machine" it may save considerable time, and for the purpose of saving time for the court and the parties, I will ask you to kindly examine the cut of a welting machine as illustrated in the catalogue of the United Shoe Machinery Company, and ask you to state whether that properly illustrates the present commercial type of welting machine of the United Company? Do you know where to find it?

*Ans.* That catalogue is some eight or ten years old, is it not, Mr. Webster?

*Int.* 1248. I don't know. You know. You had a cut of one of your last illustrations.

*Ans.* I think there is an index to that catalogue.

*Int.* 1249. At which end?

*Ans.* At the back end, I think.

*Int.* 1250. [Counsel hands book to witness.] That is page 6, isn't it, Mr. Howard?

*Ans.* Yes. [Witness examines cut.] The cut in this catalogue shows the Goodyear welt and turn shoe machine, which was superseded by welt and turn shoe machine Model G and again by welt and turn shoe machine Model K.

*Int.* 1251. Kindly state when Model G was first put in.

*Ans.* I don't know that I can state exactly without looking it up, but it was put out about 1907.

*Int.* 1252. When was Model K first put out, so far as you know?

*Ans.* I believe Model K was put out late in 1910 or early in 1911.

*Int.* 1253. Will you kindly examine the records and testify at some subsequent hearing as to the exact dates so far as possible?

*Ans.* I should be glad to.

*Int.* 1254. Kindly state for how long a period, so far as you know, the welter illustrated on page 6 of the United catalogue, to which illustration you have made reference in your previous answers, was in use.

*Ans.* I am afraid my recollection is too vague to venture a statement about that, Mr. Webster. I will be glad to look it up.

*Int.* 1255. State as nearly as you can recollect at the present time, and then you can look it up later, if you will, kindly.

*Ans.* I think it was in use for some eight or ten years.

Mr. CHOATE. Model F?

The WITNESS. That is a machine without a model name,—Good-year welt and turn shoe machine.

Mr. WEBSTER. Mr. Choate, will you furnish us a catalogue like this so that we may put it in evidence?

The WITNESS. I think I can get one.

Mr. WEBSTER. For the present, I should like to have this marked for identification, and then put in one.

Mr. CHOATE. You mean the present catalogue? You mean another one like that?

Mr. WEBSTER. Yes.

The EXAMINER. Government Exhibit 190 for identification. That is the catalogue of what year?

*Int.* 1256. What year was this issued, if you know, Mr. Howard?

*Ans.* About 1902 or 1903, I think.

*Int.* 1257. Can you ascertain; and, if so, will you?

*Ans.* I will.

*Int.* 1258. And give us the date. Then, as I understand you, according to your recollection, the type of welter shown in the cut to which you have made reference was the commercial welter of the United Company for a period of ten years?

*Ans.* Approximately, so far as I can now recall.

*Int.* 1259. Can you state how many welters like the one illustrated in the cut referred to were put out by the United Company during the ten-year period?

*Ans.* Not without looking it up.

*Int.* 1260. Can you state approximately?

*Ans.* I should hardly venture to. I have had no occasion to know.

*Int.* 1261. Will you look it up and give us the date the next session?

Mr. CHOATE. The question is, how many?

Mr. WEBSTER. About how many; whether it is one hundred, a thousand, a million or ten million.

Mr. CHOATE. How is that question opened by anything asked in cross?

Mr. WEBSTER. It seems to me it is. I do not know.

Mr. CHOATE. I do not see how it is, and I should like to object to it, as very plainly the burden of looking up statistics is a tremendous one, even if Mr. Howard didn't have to testify. I do not want to have him loaded with looking up a lot of things if it is not material.

Mr. WEBSTER. Why don't you tell us?

Mr. CHOATE. It does not come in his department.

The EXAMINER. All we can do is to note the objection on the record.

Mr. CHOATE. I think I will suggest to Mr. Howard that he do not look it up.

*Int.* 1262. Will you kindly state what patents of the defendants were made upon the welting machine illustrated on page 6 of the catalogue?

Mr. CHOATE. To that question I object as not opened by any cross-examination.

Mr. WEBSTER. That is one of the questions, I suppose, we will have to leave for the court to pass upon later.

*Int.* 1263. Kindly state how the welting machine referred to by you as Model G differed from the welting machine illustrated on page 6 of the catalogue.

Mr. CHOATE. I make the same objection.

*Int.* 1264. Please state how the welting machine referred to by you as Model K differed from the welting machine illustrated on page 6 of the catalogue.

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Mr. CHOATE. The same objection.

*Int.* 1265. Your answer with reference to the Globe welter was somewhat confused, as it seems to me, and, for the convenience of the court, will you kindly state briefly whether any of the Globe welters were manufactured and put out by the defendant company?

The EXAMINER. Before that question is answered, might it be made perfectly clear? Mr. Choate instructed the witness not to answer those questions which were objected to. It might appear from the record they were withdrawn. Ordinarily a question, although objected to, is answered; but if counsel directs the witness not to answer them, of course he does not.

Mr. CHOATE. I assume we have that right under the concluding cause of the order: "The Court reserves control of the proceedings before the examiner. So far as either party finds it necessary to protect their rights upon any question as to the admission of proof, either party may apply to the Court."

The EXAMINER. There will probably be questions to which you do object which may be answered?

Mr. CHOATE. Possibly.

Mr. WEBSTER. Counsel for the United States reserves the right to submit the questions objected to to the court so that the witness may be instructed as to whether they should be answered or not.

Mr. CHOATE. Why don't you conclude your re-examination, and then, if you believe it necessary to call him on these questions, I suppose you have a perfect right to do so?

Mr. WEBSTER. I suppose so, but I would like to group the whole business.

[*Question read by the stenographer as follows:*]

"Your answer with reference to the Globe welter was somewhat confused as it seems to me, and, for the convenience of the court, will you kindly state briefly whether any of the Globe welters were manufactured and put out by the defendant company?"

*Ans.* As I stated, the demand for lockstitch welters entirely ceased after this acquisition, and very few, if any, Globe welters were put out.

*Int.* 1266. Then, as I understand you, so far as you know, none

of the Globe welters were put out by the defendant company. Is that correct?

*Ans.* I cannot state now whether any were put out.

*Int.* 1267. But, so far as you know, none were?

*Ans.* I think I have answered that question.

*Int.* 1268. Will you kindly look that up and answer?

*Ans.* I might need more than a day for this.

*Int.* 1269. The question is, will you look it up?

*Ans.* It may involve the time of half a dozen clerks for several days possibly.

*Int.* 1270. You have not answered the question now.

*Ans.* Certainly.

*Int.* 1271. I notice in your cross-examination reference has been made to sole-laying machines, sole-beating machines, sole-leveling machines and sole-pressing machines. Will you kindly state whether these four machines differed materially in construction or whether those are different names of the same machine?

*Ans.* I was not aware that I had used all of those expressions, except possibly in quoting the titles of patents. I shall be glad, however, to explain that the term "sole-laying machine" is used in the trade as meaning a machine for pressing on the sole of a shoe, — the outsole,— and securing it temporarily to the shoe by cement, while the term "leveling machine" is a generic term including numerous types of machines for imparting to the sole by pressure, after the sole has been permanently attached, the shape which it is desired that the sole shall have in the finished shoe.

*Int.* 1272. Then, does the sole leveling include sole beating and sole pressing?

*Ans.* The term "sole beating" is sometimes used to designate leveling machines. I am not aware that the expression "sole pressing" is used in the trade.

*Int.* 1273. In your cross-examination you made reference to the Cutcheon patent, which patent I think you stated had been extensively litigated. Kindly state whether the Cutcheon patent to which you made reference is No. 384,893, beating-out machine, patented June 19, 1898, a copy of which patent I hand you for inspection.

*Ans.* Yes, sir.

Mr. WEBSTER. A copy of patent to J. C. Cutcheon, beating-out machine, dated June 19, 1898, No. 384,893, offered in evidence, is marked "Plaintiff's Exhibit 191".

*Int.* 1274. Kindly state whether at the time of purchase from the American Sole Laying Company of these properties, any suits, so far as you know, were pending between the United Company and the then owner of the Cutcheon patent.

*Ans.* Under the Cutcheon patents?

*Int.* 1275. Owner of the Cutcheon patents?

*Ans.* Yes. Suits under the Cutcheon patents?

*Int.* 1276. Yes.

*Ans.* I do not recall that at that time the United Company was a defendant in a suit on the Cutcheon patent.

*Int.* 1277. You say in your answer, page 524 of the typewritten record [printed page 699] : "That patent [*referring to the Cutcheon patent*] had been sustained by the Court of Appeals, and manufacturers had been forced to pay heavy damages for the infringement of the patent." Kindly state what suits you had reference to in making that answer.

*Ans.* The large number of suits had been brought by the Tripp-Giant Leveller Company, the owners of that patent, against users of machines made and put out by the Bresnahan concern, of which I think the name was M. V. Bresnahan & Company. As I stated in my previous testimony, the patent had been sustained by the Court of Appeals in one or more of those suits, and the Bresnahan concern and a large number of shoe manufacturers who had used the Bresnahan machine were forced to pay heavy damages on account of their infringement of that patent.

*Int.* 1278. In making your last answer, do you state facts of your own personal knowledge, or do you rely on statements made by others?

*Ans.* I did not have cognizance of these suits at the time they were brought, but I believe the facts to which I refer are largely, if not entirely, of record in this court.

*Int.* 1279. Have you examined the record?

*Ans.* No, sir.

*Int.* 1280. Then, with reference to these facts you are testifying from hearsay, are you not?

*Ans.* Perhaps I may say that I am entirely confident that the facts are as I have stated.

**Mr. WEBSTER.** The answer objected to as not responsive.

*Int.* 1281. I call your attention to the fact that the contract of transfer from the Bresnahan Company is dated December 10, 1910, while the Cutcheon patent to which you have testified expired in 1905. Will you kindly explain to the court how the purchase of a right under that patent after its expiration was important at the time of purchase so made?

*Ans.* I do not recall that I mentioned the Cutcheon patent in connection with the transaction which the United Company had with M. V. Bresnahan & Company in 1910. In testifying about the acquisition of the patents of the American Sole Laying Machine Company in 1902, I testified that the United Company desired to make a two-form machine out of the machine of the — out of the sole-laying machine which it had previously acquired from the Boot and Shoe Sole Laying Machine Company, but could not do this because a two-formed sole-laying machine of that type would infringe this Cutcheon patent; and I further explained that the American Company had a license under the Cutcheon patent 384,893, which license the United Company acquired from the American Company, so that it was then enabled to put out a two-form sole-laying machine of the — so that it was then able to transform the sole-laying machine which it was then putting out of the single type into a two-form machine which had double the capacity of the single type machine.

*Int.* 1282. Did the United Company to your knowledge manufacture and put out beating-out machines constructed as set forth in the Cutcheon patent 384,893?

*Ans.* After the acquisition of the American Sole Laying Machine Company and the license which that company had under the Cutcheon patent, the United Company put out two-form sole-laying machines, and they also put out two-form leveling machines, both of

which machines were covered by claim 1 of the Cutcheon patent in question.

*Int.* 1283. You perhaps did not understand the question. The question was: Did the United Company put out machines constructed as shown in the Cutcheon patent 384,893?

*Ans.* If I recall correctly, the license acquired from the American Company was limited to sole-laying machines, in which case, of course, the United Company had no right to put out leveling machines,—put out the leveling machine shown and described in the Cutcheon patent. It did not, so far as I am aware, put out (at least for some years) a machine like that shown in the Cutcheon patent.

MR. CHOATE. You say the license was limited to sole laying?

THE WITNESS. That is my recollection. I have not a copy of the license, but my notes would indicate that the license was limited to sole-laying machines.

*Int.* 1284. Pardon me, but I do not understand that you have answered the question. I will put it in this form: Did the United Company, to your knowledge, ever put out a machine constructed as shown in the Cutcheon patent 384,893?

MR. CHOATE. I should like my objection noted to that question as immaterial and not opened by anything on cross-examination.

*Ans.* I have stated that the United Company put out machines embodying the invention covered by that patent. I am not aware that it has ever put out a machine identically like the machine shown in the drawings of the patent.

[*Adjourned to 10 A. M., Tuesday, July 15, 1913.*]

BOSTON, MASS., July 15, 1913.

*Direct Examination by WILLIAM S. GREGG, Esq., of Counsel for Complainant.*

*Int.* 1285. Mr. Howard, did you find that eyeletting agreement of 1897? You will remember I asked for it in connection with the Boston Fast Color Eyelet Company.

*Ans.* I could not find that, Mr. Gregg.

*Int.* 1286. You made a search for it?

*Ans.* Yes. It is an old instrument, you will recollect. The United Company was not a party to it. It was executed before 1899.

*Int.* 1287. I understand that, but it was a part of the agreement with the Boston Fast Color Eyelet Company. You made a search for it and could not find it?

*Ans.* I made a search for it and could not find it. It was not in the files where it would have been if we had had it.

*Int.* 1288. Did you make inquiries of anyone else about it?

*Ans.* I inquired of the clerk who had charge of the documents, and she could not remember such a document.

*Direct Examination by ALLEN WEBSTER, Esq., of Counsel for  
Complainant.*

*Int.* 1289. Did you bring in that catalogue?

*Ans.* Yes, Mr. Webster.

[*Passes to Mr. Webster "Illustrated Catalogue of Shoe Machinery Manufactured by the United Shoe Machinery Company."*]

*Int.* 1290. Do you give it to us?

*Ans.* Certainly, if you wish it.

*Int.* 1291. I want to multilate it.

*Mr. WEBSTER.* Counsel for defendant having kindly produced a copy of the catalogue of the United Shoe Machinery Company similar to the one marked for identification yesterday, counsel for the United States offers in evidence the cut on page 6 of said catalogue and the printed matter on page 7, said cut being entitled "Goodyear welt and turn shoe machine", the printed matter reading as follows:—

"This machine sews the welt on the shoe, fastening together with a chain stitch the welt, upper and insole. It practically duplicates the work of the hand welt sewer. This machine is immensely popular, and its use is constantly increasing. It has been improved and developed to the point of perfection. It measures the thread to the needle perfectly, thereby preventing all abrasion to the thread. After the needle has drawn the loop through the work and has returned again through the stock, the take-up tightens the stitch by pulling on the supply end of the thread while the needle firmly supports the leather between stitches against the sawing action or the thread. This is the only method yet discovered for

tightening the chain stitch without destroying the between substance. The chain and the stitch is placed on the outside of the welt or in the case of a turn shoe on the outside of the lining of the upper (before turning). This method of forming and tightening stitches gives a perfect result such as can be obtained in no other way."

I suppose it is unnecessary, Mr. Choate, to read the matter in small type.

Mr. CHOATE. I will ask the examiner to note the defendants' objection to this evidence as immaterial, irrelevant and inadmissible, and not opened by anything developed in the cross-examination.

[*Illustrated catalogue of shoe machinery manufactured by the United Shoe Machinery Company marked "Plaintiff's Exhibit 190".*]

Mr. CHOATE. I understand it is that cut and that reading matter which constitutes the exhibit?

The EXAMINER. Yes.

Int. 1292. When did the United Company put out the catalogue referred to in the last question?

Ans. About May 1st, 1902.

Int. 1293. And for how long a time did the United Company put out welting machines constructed as illustrated in the Exhibit 190?

Ans. The United Company continued to put out that machine for some years. As I stated yesterday, it was later superseded by Model G.

Int. 1294. Kindly state, as near as you are able, for how many years the United Company put out machines as illustrated in the Exhibit 190.

Ans. Excepting the small number of lockstitch welters which were put out, and excepting the Model E machines which were being put out, or which were put out at about the time this catalogue was issued, the machine shown in the exhibit was the regular commercial machine of the United Company until the adoption of the Model G, which was in 1908.

Mr. CHOATE. Wasn't it Model F?

The WITNESS. Model G.

Mr. CHOATE. Was there any hiatus between Models E and G?

The WITNESS. I don't know that there was.

*Int.* 1295. In the cross-examination you made reference to the patent referred to by you, as I recollect it, as the Briggs patent.

Mr. CHOATE. Where did he refer to that, Mr. Webster?

Mr. WEBSTER. I don't know where, but he did.

*Int.* 1296. Will you kindly —

Mr. CHOATE. I think that we better be exact about that.

Mr. WEBSTER. Do you doubt it?

Mr. CHOATE. No.

Mr. WEBSTER. The reference is on page 707 of the printed record.

*Int.* 1297. In the cross-examination you made reference to the patent referred to by you, as I recollect it, as the Briggs patent, the Briggs method. Kindly give the number, date and title of the Briggs patent referred to by you.

*Ans.* The Briggs patent to which I referred was No. 461,793, granted October 20, 1891.

*Int.* 1298. You may give the title.

*Ans.* "Method of Forming Chain Stitches."

*Int.* 1299. Did the Briggs patent No. 461,793 become the property of the United Company?

*Ans.* Yes, sir.

*Int.* 1300. Who was the owner of the Briggs patent at the time that suit was brought against the Globe Sewing Machine Company?

*Ans.* I have not the date of the suit before me, but recall that it was brought in the name of the Goodyear Shoe Machinery Company. That may have been, however, after the United Company was formed and before the patent had been formally assigned to the United Company.

*Int.* 1301. Did the United Company have any machines which carried out the Briggs method?

*Ans.* Yes, sir.

*Int.* 1302. What machines?

Mr. CHOATE. Wait a moment. I don't see how that was opened under anything in the cross-examination; do you?

Mr. WEBSTER. Well, I think it is.

Mr. CHOATE. Won't you point out what?

Mr. WEBSTER. It goes to the general subject-matter testified to by the witness.

Mr. CHOATE. He did not testify at all as to the machines which the company had, in this respect. He said the Globe Sewing Machine Company was in litigation, and that they were sued under this patent. That clearly had no connection with the machines which the United Company might have been making under that patent. You will note that our objection was to Mr. Howard's being examined in chief during the course of your redirect. It is going to save us both trouble and time if you will finish your redirect before you begin in this matter.

Mr. WEBSTER. It seems to me it will be easier for the court if we could get it all under one heading, rather than to spread it in different parts of the record.

Mr. CHOATE. Well, I don't think it would be. It would not, from our point of view, and I think we shall have to insist on our right there, that you shall finish your redirect.

Mr. WEBSTER. I don't think we are compelled to do that. I don't understand that the witness objects.

Mr. CHOATE. Well, I shall have to instruct the witness not to answer any questions which it seems to us are outside the legitimate scope of this examination.

Mr. WEBSTER. Then, as I understand you, you do instruct the witness not to answer?

Mr. CHOATE. Yes; I think this is not legitimate redirect.

Mr. WEBSTER. Then I suppose the witness ought to enter upon the record that, by instruction, he declines to answer?

Mr. CHOATE. Yes.

The WITNESS. By advice of counsel, I decline to answer.

*Int.* 1303. Referring now to the acquisition from Stanbon, referred to in Government Exhibit 145, you say the device was

commercially successful. Will you kindly state what you mean by the term "commercially"?

Mr. CHOATE. Will you state the number of the question you are quoting?

Mr. WEBSTER. This is on page 608.

Mr. CHOATE. Is not the question numbered?

Mr. WEBSTER. The first question I called his attention, where the acquisition is referred to, is 557. The particular question referred to where the words "commercially successful" are used in the interrogatory, where he adopted it, is 560.

Mr. CHOATE. Your question now is what?

[*Question read by the stenographer.*]

Mr. CHOATE. I think I used the term "commercially successful" in my question.

Mr. WEBSTER. Yes, but he adopted it. He says: "Yes; we had been using this thing ourselves prior to the declaration of interference."

Mr. CHOATE. All right. I don't care.

Mr. WEBSTER. I will change it if you prefer.

[*Question read by the stenographer.*]

Ans. In this instance, I meant that manufacturers had found that this device would perform the work for which it was intended very advantageously and rapidly and that the device had gone into extensive use in shoe factories.

*Int.* 1304. In answer to question 560, page 509 of the printed record, you refer to an interference. Kindly state whether a patent issued upon any of the applications involved in that interference; and, if so, give the number and date of the patent.

Ans. Upon the Stanbon application, serial No. 195,598, filed February 27, 1904, there was issued patent No. 1,004,705, granted October 3, 1911, for channel-cementing machine.

*Int.* 1305. And was that patent issued to the United Company?

Ans. Yes, sir.

*Int.* 1306. Was any other patent involved in that interference issued?

Ans. I believe that the application on which was granted patent

1,030,623, granted June 25, 1912, F. H. Warren, was also involved in the interference. I do not recall now, but can ascertain if desired, whether other applications involved in these interferences have matured into patents.

*Int.* 1307. I would appreciate it if you would kindly do so.

*Ans.* I would be glad to.

*Int.* 1308. Kindly state how many interferences were pending.

*Ans.* There were several. The exact number I cannot state from memory, but shall be glad to ascertain if desired.

*Int.* 1309. Please do so. In referring to the acquisition of the Booth perforator, you say, in answer to question 572, page 610 of the printed record: "Not under the circumstances that I refer to." Will you kindly explain what you mean by that answer?

*Ans.* I had reference by that answer to the special work for which the Stanbon perforating machine is adapted, as indicated in my answers to questions 564, 565 and 566.

*Int.* 1310. Your explanation does not seem clear to me. Will you kindly state under what circumstances the ornamentation of the two machines was different so as to avoid the necessity of referring to other questions and answers to ascertain your meaning?

*Ans.* The ornamentations of the two machines were different, when the Stanbon machine was adapted for doing embossing work rather than perforating; that is, when it was used with a heated tool for impressing the ornamentation in the upper stock rather than perforating it.

*Int.* 1311. And was the Stanbon machine adapted also to do the same class of work as the other machine to which you have referred?

*Ans.* These two machines have distinct fields owing to radical differences in their organizations. The machine acquired from the Booth Company is a punch feed machine and is far more accurate on curved work. The fact that it is a punch feed machine limits its range of work to that in which the spacing does not exceed a maximum of fifteen thirty-seconds of an inch. The Stanbon machine on the other hand is very much faster and therefore is better

adapted for substantially straight-edge work, and as the work operated upon in it is fed by a feed wheel it is has unlimited capacity as to spacing. I have in my hand a sample of work in which the spacing is one and one-eighth inch, which is more than double the maximum spacing permissible on the Booth perforator. This sample of work was done on the Stanbon machine.

[*Piece of leather with perforations produced by Stanbon machine marked "Defendants' Exhibit 100".*]

Int. 1312. Referring further to the acquisition from Stanbon, you say in answer to cross-question 574: "We haven't got it quite commercial yet", referring to the folding machine. Kindly state what you mean by "we".

Ans. The United Shoe Machinery Company.

Int. 1313. Well, do you mean the officers, managers, mechanics, or yourself, in using the term "we"?

Ans. Those who are engaged in developing and perfecting this machine or the inventors who are working upon it, the machinists and road men who are assisting them, and the experimental committee who are supervising and directing their work.

Int. 1314. In the same answer you say: "We think we have got it pretty nearly right now." Do you mean by that phraseology that you are testifying to what others have told you about it?

Ans. That opinion was based upon my personal knowledge of the machine, assisted of course by the views of experts.

Int. 1315. In answer to question 576, which was "not developed commercially" you say: "No, we have not put anything out, and that was a long way from a commercial machine when we took it." Do you mean by the words "not developed commercially", as understood by you, that the machine was not operative at that time?

Ans. No, sir; I did not mean that.

Int. 1316. In answer to question 578, you say: "I think all the machines are covered by patents." Will you kindly give a list of the patents referred to by you in that answer?

Ans. 640,426, January 2, 1900, —

Int. 1317. If you have the title there, put that right in.

*Ans.* On the list that I am referring to, there is a title given which I think is the title of the patent. It would take some little time to look at each copy of the patent.

*Int.* 1318. I am content that you should take the title as you have it in your record.

*Ans.* 640,426, granted January 2, 1900, leather punching machine; 955,711, granted April 19, 1910, leather punching machine; 607,140, granted July 12, 1898, channeling machine; 663,050, granted December 4, 1900, channeling machine; 607,139, granted July 12, 1898, channel flap turning machine; 898,016, granted September 8, 1908, channel flap turning machine; 1,004,705, granted October 3, 1911, channel-cementing machine; application serial No. 427,638, filed April 11, 1908, folding machine; application serial No. 508,723, filed September 6, 1910, machine for folding pliable material.

*Int.* 1319. Is that all? Is that your answer?

*Ans.* These are the patents acquired from Stanbon which covered his machines.

*Int.* 1320. Kindly state whether the applications referred to in your last answer have since merged into patents.

*Ans.* No, sir; they are still pending.

*Int.* 1321. Kindly explain to the court what you mean by the use of the term "covered" as employed in your last answer but one.

*Ans.* I mean that the inventions claimed in the patents and applications which I named are embodied in the machines which we acquired from Stanbon.

*Int.* 1322. In your answer to the question 582, page 611, you make reference to a large number of suits, this being in connection with the purchase from M. V. Bresnahan & Company. Your answer apparently is responsive to the question as to whether there had been a large number of suits brought by one side or the other. Kindly state what company you have reference to as parties to the litigation other than the Bresnahan Company.

*Ans.* I had reference to suits between Bresnahan, or concerns in which he had been interested, and the United Shoe Machinery Company.

*Int.* 1323. Will you kindly give the names of the concerns you refer to in your last answer, other than M. V. Bresnahan & Company?

*Ans.* I believe that Mr. Bresnahan had done business under the name of Bresnahan Shoe Machinery Company, and also I believe under the name of M. V. Bresnahan & Company. I think he may have done business also under the name Maurice V. Bresnahan.

*Int.* 1324. Are you testifying, with reference to the suits referred to and the settlements made, from your own personal knowledge, or because of what you have learned from others?

*Ans.* I have had personal knowledge of much of this litigation, — probably all of it.

*Int.* 1325. Are you sufficiently familiar with the litigation referred to so that you can give the names of the cases and the patents involved?

*Ans.* I can give information at this time about some of the suits for infringement of patents, although there were also other suits. Those which I recall are Equity No. 1772, United Shoe Machinery Company *v.* Bresnahan Shoe Machinery Company —

*Int.* 1326. If you have a record there of when the bill was filed, kindly state it.

*Ans.* The bill filed August 17, 1903, — and Equity No. 286, Maurice V. Bresnahan *v.* United Shoe Machinery Company, bill filed August 9, 1906.

*Int.* 1327. In referring to the acquisition of property from Bresnahan, you, in answer to cross-question 591, page 612, referring, as I understand it, to the burnishing machine, say: "An application was pending upon it." Kindly state whether the application has merged into a patent as yet; and, if so, give the number, date and title.

*Ans.* The patent has not yet been granted upon that application.

*Int.* 1328. Referring to the application of the Prenzel improvements, you say, in answer to question 595, page 612: "Yes. Patents had been granted." Will you kindly give the number, date and title of the patents referred to in that answer?

*Ans.* The question and the answer apparently relate to the

underwedge shoe, a process of making the shoe which we acquired — which the United Company acquired from Prenzel. The patent on the shoe was No. 967,053, granted October 9, 1910, which was reissued as No. 13,448 on July 23, 1912. The patent on the process of making this shoe was No. 960,234, granted May 31, 1910, which was also reissued as No. 13,447 on July 23, 1912. This process was also covered by patent No. 1,050,040, granted January 4, 1913. Although this question and answer do not refer to the machines for making the shoe, but to the patents on the Cack shoe, the process of making it and the machine for making it, I can state the data of those patents, if you desire.

*Int.* 1329. Please do so.

*Ans.* The various machines used by Prenzel in the manufacture of the underwedge shoe were covered by the following patents: 959,256, granted May 24, 1910; 965,744, granted July 26, 1910; 965,656, granted July 26, 1910, which was reissued as No. 13,375 on February 27, 1912. The Cack shoe was covered by an application which was pending at the time of the Prenzel acquisition, upon which was later granted patent 1,031,196, granted July 2, 1912.

*Int.* 1330. Did you give the title there?

*Ans.* "Shoe." The process of making the Cack shoe was likewise covered by a pending application, upon which was granted, on June 25, 1912, patent No. 1,030,609. The machine used in making the Cack shoe was covered by a pending application at that time, upon which was granted, on June 25, 1912, patent No. 1,030,608.

*Int.* 1331. Now, for the convenience of the court, will you kindly briefly explain the difference between the Prenzel shoe and the plain ordinary shoe that has been in use for twenty years?

**Mr. CHOATE.** He has fully described that in his examination, and we used exhibits to demonstrate it.

**Mr. WEBSTER.** My recollection is that it was quite extended. I should suppose he could state it in a very few words.

*Int.* 1332. Couldn't you state it very briefly, the principal points of difference; in other words, is it what is known as a freak shoe, or is it a common everyday shoe?

*Ans.* Perhaps I can refer to the patent in such a way as to be clear —

*Int.* 1333. I would prefer that you would not refer to the patent. I would like to have it clear in a brief, plain statement so that a layman could understand the difference.

*Ans.* I think I will need the exhibits, Mr. Webster.

*Int.* 1334. While waiting for the exhibits, I will ask you this question: Is the Prenzel shoe a shoe which has gone into extensive use?

*Ans.* The shoe,—the underwedge shoe,—invented by Prenzel has been manufactured in considerable numbers since the Prenzel acquisition.

*Int.* 1335. Who makes the Prenzel shoe?

*Ans.* Prenzel himself has made the shoe, and it has been made by several others. The expectations which were entertained at the time of the acquisition —

*Int.* 1336. Pardon me. I wish you would answer the question without going into explanation of expectations.

*Ans.* I have answered it.

*Int.* 1337. Can you give the name of any individual, copartnership or corporation other than Prenzel that are now manufacturing the Prenzel shoe?

*Ans.* I cannot from memory.

*Int.* 1338. Can you give the name of any party who has made it other than Prenzel?

*Ans.* The only one which I recall now is the concern which I believe is known as the Curtis & Jones Company.

*Int.* 1339. In referring to the acquisition from the Sturtevant Company, you said, as I understand you, that prior to the purchase from the Sturtevant Company the United Company bought its peg wood from others. (This matter is referred to on page 613, Cross-Interrogatory 605.) Kindly state, if you know, from whom the United Company bought peg wood prior to the time of the purchase from the Sturtevant Company.

*Ans.* I cannot name the concerns without looking them up.

*Int.* 1340. If you can look them up without inconvenience, will you kindly do so and give us the data later?

*Ans.* That is necessary, is it, Mr. Webster? That involves quite a little work.

*Int.* 1341. Can't you ascertain by inquiry? I won't ask you to go to the records.

*Ans.* If you are willing for me to take statements by others without examining the books, I should be glad to.

*Int.* 1342. In this matter; yes. In referring to the acquisition of the Wentworth Company property, you say, as I understand you, in answer to cross-question 615, found on page 614, that the shank-sticking machine and the heel-beating machine were patented. Will you kindly give the number, date and title of the patents referred to in that answer?

*Ans.* The shank-sticking machine was covered by patent No. 929,178, granted July 27, 1909.

*Int.* 1343. What is the title?

*Ans.* "Cement Heating and Distributing Apparatus." On the Wentworth heel seat forming machine —

*Int.* 1344. It is referred to here as "heel-beating machine". That means the same, does it?

*Ans.* —as I believe the beating machine was known commercially, were the following patents: No. 854,320, granted May 21, 1907; heel seat forming machine, No. 876,249, granted January 7, 1908; shoe ironer — that last patent should not be included; that was not commercial — No. 896,873, granted August 25, 1908; heel seat forming machine inventions which were embodied in most but not all of these machines, were covered by No. 844,293, granted February 12, 1907, 1,010,550, granted December 5, 1911, upon an application which was pending at the date of the acquisition of the Wentworth Company patent.

*Int.* 1345. Then it is your understanding that the term as used in the question "heel-beating machine" means the same as "heel seat forming machine". Is that correct?

*Ans.* These terms refer to the same machine which was known by various names during the period preceding the acquisition of the Wentworth patent.

*Int.* 1346. The term "heel beating" would appear to indicate

that the operation performed by the machine was on the heel, while "heel seat forming" seems to indicate that the operation was on the shoe. Kindly explain which is correct.

*Ans.* The machine was always used upon the shoe prior to the attachment of the outer sole.

*Int.* 1347. I understand you to say, in answer to cross-question 621, page 615, that the shank-sticking machine went into use and was furnished to customers. Kindly state where the machine went into use, if you know. To whom did you furnish it? Where is it in use?

*Ans.* I cannot answer all three questions in the question that is of record.

*Int.* 1348. You say, in answer to cross-question 623, as I understand you, that the United Company furnished the shank-sticking machine to customers. Kindly state to whom the United Company furnished that machine, and, if you know, where it is in use at the present time.

*Ans.* Question 623 inquires about the new machine which the United Company constructed by combining the best features of the Wentworth machine and the machine with which we had previously been experimenting. This improved machine has been put out in large numbers, but I cannot state from memory the names of any manufacturers who have it, as I had no occasion to have such information.

*Int.* 1349. Can you, without inconvenience, make inquiry and answer from information thus obtained, giving the names of a few?

*Ans.* I should be glad to as soon as I can do so. I will endeavor to before the next session, or before tomorrow.

*Int.* 1350. In your answer to question 625 on page 621, you make reference to the "Wentworth shoe-beating machine". Kindly state whether the term "shoe-beating" as applied by you in that answer has reference to heel seat heading or to some other operation.

*Ans.* The machine which I was referring in my answer to question 625 was the Wentworth heel seat forming machine.

*Int.* 1351. On page 621, his Honor Judge Putnam inquired of

you whether the wire lacing replaced the hand method, to which I understand you answered yes. Kindly explain whether you meant by that answer that it had entirely replaced the hand method or whether it had replaced it to a large extent.

*Ans.* I meant by that answer that prior to the invention of the Ellis lacer it had been the universal practice to lace uppers by hand, prior to lasting.

*Int.* 1352. Then you did not mean to convey the impression, as I understand you, that the hand method of lacing went out of use when the wire lacing came into use?

*Ans.* I think that the hand method did not go entirely out of use upon the introduction of the Ellis lacer. I should qualify my answer by explaining that the hand method to which I refer is the introduction into the eyelets of the shoe of a string and the tying of that string by hand. Of course the Ellis lacer was also put into the shoe by hand, but its introduction into the shoe was a much simpler and quicker operation.

*Int.* 1353. You have no knowledge I suppose as to the extent to which the string method is now employed?

*Ans.* I assume that you mean the method employed prior to the introduction of the Ellis lacer. That is the lacing of the shoe by hand, and the tying of the string by hand?

*Int.* 1354. Yes.

*Ans.* On that understanding I will answer that I am confident that the hand lacing is practiced to only a very limited extent, and I should not be surprised to know that it was practically not done at all.

*Int.* 1355. On page 622 of the printed record, in referring to patents relating to metal lacing devices, you say in answer to cross-question 630: "Nearly all these patents read upon all forms of the lacer." And in answer to cross-question 631 you say: "Most of them cover the device which I showed in all its features." Will you kindly explain to the court what you mean by this phraseology? I ask the question because it would seem to indicate that in your view more than one patent described and claimed the same device.

*Ans.* Assuming that you are inquiring whether or not more than one patent read upon the same Ellis lacing device, I answer yes.

*Int.* 1356. Then will you point out what two or more patents cover, as you term it, the same device?

*Ans.* The Ellis bal. lacer. That is, the one which is formed with straight prongs as distinguished from the blucher lacer, which is formed with outwardly turned ends, was covered by patent 688,297, granted December 10, 1901, Ellis.

*Int.* 1357. The title?

*Ans.* "Fastening for shoe uppers." Also by No. 744,659, granted November 8, 1904, Ellis, fastener for shoe uppers; and also by patent No. 715,316, granted December 9, 1902, Sweeney, upper fastener for boots or shoes. The Ellis blucher lacer was also covered by several patents, as follows: No. 688,297, granted December 10, 1901, Ellis, fastening for shoe uppers; No. 744,659, granted November 8, 1904, Ellis, fastener for shoe uppers; No. 825,710, granted July 10, 1906, Ellis, fastener for shoe uppers, and No. 715,316, granted December 9, 1902, Sweeney, upper fastener for boots and shoes. The Ellis adjustable lacer was covered by the three patents already enumerated as covering the bal. lacer and also by No. 825,710, granted July 10, 1906, Ellis, fastener for shoe uppers. The adjustable lacer was also covered by application serial No. 525,987, filed November 3, 1909, upon which has been granted patent No. 999,765, dated August 8, 1911. The adjustable lacer was further covered by application serial No. 501,471, filed June 11, 1909, Ellis, upon which has been granted patent No. 988,322, dated April 4, 1911. The three lacers upon which I have stated the patent protection were the three which were put out to the largest extent at the time of the acquisition of the Ellis patents. There were, however, possibly half a dozen other types of lacers for special use, all of which were also covered by patents or applications which I shall be glad to enumerate if desired.

*Int.* 1358. Please do so.

*Ans.* The spring or semi-hinged Ellis lacer was covered by patent 688,297, granted December 10, 1901, Ellis; by patent No. 744,659, granted November 8, 1904, Ellis, and by patent 936,391,

granted October 12, 1909, Whelan. The hinged Ellis lacer was covered by patent No. 688,297, granted December 10, 1901, Ellis; No. 744,659, granted November 8, 1904, Ellis, and on No. 704,451, granted July 8, 1902, Ellis. The Pierce single lacer was covered by No. 653,929, granted July 17, 1900, Harlow, and No. 915,755, granted March 23, 1909, Ellis. We also acquired from the Ellis Lacer Company one patent on machine used in the manufacture of Ellis lacers, No. 795,209, granted July 18, 1905, Ellis and Chadwick.

*Int.* 1359. Where you say two or more patents covered the same device, do you mean that the patents were of the same scope, or were of some generic and some specific?

*Ans.* Relying upon my memory and without examining all of these patents, I should state that in some instances the relation of two or more patents reading upon the same device is that of generic and specific patents, while in other cases the patents covered different parts or features of the device in question.

*Int.* 1360. Then, is it your understanding that where a patent covers, as you term it, a different part from the part which is covered by another patent, that they both cover the same device?

*Ans.* I should consider that where two patents covered different parts of the same wire lacing device, they both cover that device.

*Int.* 1361. Were any of the applications upon which the patents referred to by you were issued involved in interference with any of the other applications upon which any of such patents issued?

*Ans.* I cannot answer that question without looking up the matter, but call attention to the fact that most of these patents were taken out by the same inventor, Warren E. Ellis.

*Int.* 1362. If you can without inconvenience ascertain the fact, will you kindly do so and testify to the same at some later session?

*Ans.* Do you desire any of this information more promptly than some other?

*Int.* 1363. No. No hurry about it.

*Ans.* You are outlining considerable work for me.

*Int.* 1364. I thought you perhaps had it tabulated.

Mr. CHOATE. Is the question of interference of importance in this inquiry?

Mr. WEBSTER. It is not of much importance, but where there are two patents on the same thing I should like to know why.

The WITNESS. The patents speak for themselves more quickly than I can ascertain and state to you.

*Int.* 1365. Then I understand it is not convenient for you to make the search in answer to that question?

*Ans.* I shall be glad to, if you desire it.

Mr. CHOATE. It involves a great deal of time.

The WITNESS. I did not speak of that so much in connection with this particular question, but the accumulation of matters which I am to look up is getting large and all together they will require considerable time.

*Int.* 1366. If it involves much trouble or inconvenience, I will not ask it. If you find it convenient and involving very little time, I should like it.

*Ans.* Under those circumstances I shall certainly get it for you.

*Int.* 1367. Referring to the purchase from Rice and LaChappelle on page 622, in answer to questions 632 and 633, you refer to patents and applications. Kindly state whether the applications referred to have yet merged into patents or whether the applications are now pending.

*Ans.* It will be necessary for me to examine the schedule referred to in that question before I can answer that question.

*Int.* 1368. I think the schedule refers to applications.

Mr. CHOATE. Can we have Exhibit 128?

[*Exhibit 128, schedule, produced by the examiner and inspected by witness.*]

*Ans.* Referring to schedule A in Plaintiff's Exhibit No. 128, application serial No. 326,687 mentioned in that schedule has matured into patent No. 1,030,736, granted June 25, 1912.

*Int.* 1369. And the title?

*Ans.* "Attachment for chain stitch sewing machine." Application No. 332,970 has matured into patent No. 1,030,784, granted June 25, 1912, chain stitch seam and method of making chain stitches.

Application No. 261,956 has matured into patent No. 1,048,549, improvement in lockstitch shoe sewing machines, granted December 31, 1912.

*Int.* 1370. Referring to the acquisition from the Carver Cotton Gin Company, you say in answer to question 640, page 623, that that company had gotten into the business of making two or three shoe machines through having manufactured, at one time and another, machines on contract for certain parties who did not have shops of their own, and that they had gotten into it accidentally. If these statements are facts within your own knowledge, kindly state for whom that company manufactured machines on contract for other parties.

*Ans.* Those statements were made on the authority of Mr. Hobart, the president of the Carver Cotton Gin Company; but I cannot at this time state the names of any parties for whom the Carver Company had so manufactured machines under contract.

*Int.* 1371. Can you give the name of any party for whom the Carver Cotton Gin Company made shoe machines?

*Ans.* I can upon looking it up. It is a matter of common knowledge.

*Int.* 1372. If you can ascertain the fact inquired about without inconvenience, kindly do so. In question 641, page 623, reference is made to the Acme leveling machine. Kindly state whether or not the Acme leveling machine referred to in that question and answer is illustrated in the catalogue of the United Company issued, as stated by you heretofore, in 1902; and, if so, on what page?

*Ans.* I think not. I do not find it in the index.

*Int.* 1373. State whether the Acme leveling machine referred to in the question and answer was manufactured and put out by the United Company.

*Ans.* When?

*Int.* 1374. At any time.

*Ans.* Yes, sir.

*Int.* 1375. State when as nearly as you can.

*Ans.* It was put out by us for some years prior to the acquisition of the business of the Carver Company. We purchased from

the Carver Company the machines which we put out. After that acquisition, we continued to put out these machines in increasing numbers,—in large numbers.

*Int.* 1376. Was the United Company putting out the Acme leveling machine in 1907?

*Ans.* Yes, sir.

*Int.* 1377. Are they now putting it out?

*Ans.* Yes, sir.

*Int.* 1378. Is the particular machine referred to in question and answer 641 covered by patents owned by the United Company?

*Ans.* I believe the machine as now put out embodies an invention covered by a pending application.

*Int.* 1379. Then, as I understand your answer, so far as you know, the machine as acquired from the Carver Cotton Gin Company was not protected by any patent?

*Ans.* That is true.

*Int.* 1380. Kindly state, if you are able, the names of some of the concerns now using the Acme leveling machine.

*Ans.* I believe I have recently been informed that there is one of those machines in the factory of A. E. Little & Company in Lynn. They are in very general use, however.

*Int.* 1381. In what department of the United Company are the Acme leveling machines classified?

*Ans.* I believe that machine is in the general department; in fact, I am positive that it is.

*Int.* 1382. In answer to cross-interrogatory 646, page 624, I understand you to say that the peculiarity of the Acme leveler is that it is principally of utility on freak shoes. Kindly state if my understanding is correct.

*Ans.* It is not.

*Int.* 1383. Kindly state what you mean by the answer referred to.

*Ans.* The word "that" in this answer refers back to interrogatory 641 and the intervening interrogatories and answers.

*Int.* 1384. Then you wish to be understood that the Acme level-

ing machine is adapted for freak shoes and sample shoes only, or do you mean that it is adapted for use on any kind of shoe?

*Ans.* As pointed out in my answers to questions 646 and 647, the Acme leveler was particularly useful,—was and is particularly useful on sample or freak shoes, every consecutive one of which may be of different size or shape. The movements of the roll and jack on this machine are entirely hand controlled, while the Good-year automatic leveling machine, which is the machine in general use for leveling welt shoes, must be adjusted for every variation in size or shape of last. The automatic leveler is so very much faster and does so much better work than the Acme that it is almost universally used for the regular work going through the factory; and, as I have stated, the Acme is used on sample and freak shoes.

*Int.* 1385. Then, as I understand you, the Acme leveling machine is adapted for use on all kinds of shoes?

*Ans.* No, sir.

*Int.* 1386. Upon what kind of shoes is it not adapted for use?

*Ans.* It is not adapted for use on turned shoes because it is too heavy; it exerts too much pressure; it is not adapted for use on McKay shoes because it is a roll machine and operates upon the shoe while the last is in it, while the McKay shoe requires a greater amount of pressure than can be exerted by the Acme machine and is leveled after the last has been removed from the shoe.

*Int.* 1387. Then do you mean that the Acme leveling machine is adapted for use upon all welt shoes?

*Ans.* The Acme machine could be used upon all welt shoes, but no manufacturer could afford to level his regular line of shoes upon that machine because it is extremely slow as compared with the automatic leveler, and the work which it does is not equal to the work of that machine.

*Mr. WEBSTER.* All that portion of the answer following the words "but no manufacturer" is objected to as not responsive. Counsel moves that it be stricken out.

*Int.* 1388. Referring further to the purchase of the Carver Cotton Gin Company, you say, on page 646, that the Amazeen skiver could not be used with commercial success as the vamp skiver pur-

chased of the Carver Cotton Gin Company. Will you kindly explain what you mean by that answer and explain why it could not be used with commercial success provided it were made of sufficient strength?

The WITNESS. Give me Defendants' Exhibits 28 and 29.

[*Question read by the stenographer.*.]

*Ans.* The Amazeen machine was equipped with a light rotating knife, and the stock was fed to it by a thin rotating disc. This construction was particularly well adapted for light leathers, and if the parts were made heavy enough for heavy leather, the machine would not operate satisfactorily on the lighter leathers, for which it is particularly constructed and designed.

*Int.* 1389. Will you kindly examine the cut of machine on page 132 of the United Shoe Machinery Company catalogue issued, as stated by you, in 1902, and state whether it illustrates the Amazeen skiver referred to by you in the several previous answers?

*Ans.* The cut on page 132 of the catalogue referred shows the Amazeen skiving machine as it was put out at the date when this catalogue was issued; that is, in 1902.

*Int.* 1390. Did the United Company put out the skiver purchased by it of the Carver Cotton Gin Company?

*Ans.* Yes, sir; we have put out that machine continuously since the purchase.

*Int.* 1391. What is its commercial name?

*Ans.* Carver vamp skiving machine.

*Int.* 1392. Is it illustrated in the catalogue of 1902?

*Mr. CHOATE.* Probably not. We did not buy it until 1908.

*Mr. WEBSTER.* Well, it is for him to say.

*Ans.* It is not illustrated in that catalogue.

*Int.* 1393. Is any machine illustrated in that catalogue adapted for accomplishing the same work as the skiver purchased of the Carver Cotton Gin Company?

*Ans.* I think not.

*Int.* 1394. Has the United Company any illustrations or descriptive printed matter relating to the skiver purchased of the Carver Cotton Gin Company?

*Ans.* Yes, sir; I have a leaflet which illustrates the Carver machine.

[*The witness produces leaflet relating to Carver vamp skiving machine, which is marked "Plaintiff's Exhibit 192".*]

*Int.* 1395. Kindly state whether the Carver vamp skiving machine illustrated in a leaflet produced by you and put in evidence as Exhibit 192 is constructed the same as the vamp skiver purchased of the Carver Cotton Gin Company.

*Ans.* I believe the construction of the machine shown in the exhibit is substantially the same as that of the machine acquired from the Carver Company.

*Int.* 1396. Referring now to the Amazeen skiving machine illustrated on page 132 of the catalogue heretofore referred to, kindly state whether the machine as there illustrated was put out by the United Company immediately after its organization in 1899.

*Ans.* This machine has been improved from time to time by the embodiment in it of inventions made since the United Company was organized, but the machine which the United Company has been putting out since its organization is of the same general type as that shown in the cut on page 132 of the catalogue.

*Int.* 1397. State if you know whether the Amazeen skiver illustrated on page 132 was put out by any of the companies which went to make up the United Company at the time of its organization.

*Ans.* It is my recollection that at the time the United Company was organized the Amazeen skiving machine was put out by the Amazeen Skiving Machine Company, the officers of which were closely related to the officers of the United Company, and the business was done in the same offices.

*Int.* 1398. And can you tell when the Amazeen Skiving Machine Company was organized?

*Ans.* I cannot, from my recollection.

*Int.* 1399. Was it prior to the organization of the United Shoe Machinery Company?

*Ans.* I think so.

*Int.* 1400. Will you state what patents, so far as you know, were in existence at any time relating to the Amazeen skiver?

Mr. CHOATE. Pause a moment. Will you point out where that was opened on cross-examination?

Mr. WEBSTER. I cannot say that it was specifically referred to, although reference has been made to the Amazeen skiving machine.

Mr. CHOATE. Well, only to the fact that the United Company had such a machine at the time that it bought the Carver vamp skiving machine.

Mr. WEBSTER. Will you instruct the witness not to answer?

Mr. CHOATE. If there is anything that you can point out that shows that it was brought out on cross-examination, I won't object to his answering.

Mr. WEBSTER. I am strongly of the opinion that it is referred to in the cross-examination in such a manner as will entitle us to make the inquiry, but I am fearful that the time required to hunt it up will be far greater than to take it up at a later time.

Mr. CHOATE. Well, do you think that it is mentioned on cross-examination except on pages 646 and 647?

Mr. WEBSTER. I could not say. I am very strongly of the impression that it was referred to in such a manner as to entitle us to make the inquiry.

Mr. CHOATE. Well, I feel quite confident that there has been no mention of patents on that machine, so I shall instruct the witness not to answer until the court orders him to.

The WITNESS. Under instructions, I decline to answer.

*Int.* 1401. State, so far as you are able, when the Amazeen skiver, constructed as illustrated on page 132 of the catalogue referred to, first went into use.

*Ans.* I think the machine shown in that drawing incorporated inventions made shortly before the publication of this catalogue, so that this particular machine, as illustrated in the drawing, had not been in use for more than a year or so.

*Int.* 1402. Had there been another skiving machine made previously which was known as an Amazeen skiver?

*Ans.* Yes, sir.

*Int.* 1403. Can you point out briefly how it differed from the construction illustrated on page 132?

*Ans.* If agreeable I should prefer to defer answering that question until I have an opportunity to refresh my recollection by examining prior types of machines and the patents which cover the various types of machines.

*Int.* 1404. That is quite agreeable to counsel. In answer to cross-question 666, on page 648, you say, referring to the vamp skiver and Acme leveler: "The patents at that time had expired on those two machines. They were comparatively simple machines." Will you kindly state, if you are able at the present time, what patents had previously been issued relating to the vamp skiver and Acme leveler referred to by you in answer to the question?

*Ans.* I have not the data as to these patents at hand, but shall be glad to look them up, if desired.

**Mr. WEBSTER.** If not too much trouble, I would like to know of them.

*Int.* 1405. Referring now to the purchase from the Richardson Shoe Machinery Company, referred to in Exhibit 125, commencing "Inventions and Patents on the Improved McKay Sewing Machine", kindly state whether the applications referred to in schedule attached to Exhibit 125 have since merged into patents. I notice at the heading of the Schedule D as follows: "Patents (including applications and interest of Richardson Company)." Kindly state, if you know, whether any applications for patents were included in the transfer.

*Ans.* I do not recall that any applications for patents were assigned as a part of this transaction.

*Int.* 1406. You say in answer to cross-question 687, on page 650: "The claim of one of these patents clearly covered a very important feature of the Model B machine." Will you kindly state what patents contained the claim referred to, and state also in a general way what you mean by "Model B machine"?

*Ans.* The claim referred to was claim 16 of Richardson patent No. 710,613, dated October 7, 1902. The Model B machine, referred to in the answer to question No. 687, was the Model B McKay sewing machine of the United Company.

*Int.* 1407. And did the United Company then continue to put out the Model B McKay machine?

*Ans.* After what date?

*Int.* 1408. After the date of the purchase from the Richardson Company.

*Ans.* Yes, sir.

*Int.* 1409. And have they since continued to put it out?

*Ans.* Yes, sir.

*Int.* 1410. And is the machine now in common use, so far as you know?

*Ans.* Yes, sir.

*Int.* 1411. Can you state some one or more of the places where it is in use?

*Ans.* Not from memory, but I can easily ascertain.

*Int.* 1412. As I understand you, this machine, Model B, was not adapted for use on welt shoes at all?

*Ans.* Not at all. It was the essence of the machine that it should be adapted for use in attaching soles to McKay shoes.

*Int.* 1413. Referring now to the purchase from Booth Brothers, Exhibits 121, 122, 123 and 124, you refer, among other things, to a fudge-edge machine. Kindly state whether or not a fudge-edge machine is a machine for ornamentation.

*Ans.* A fudge-edge machine is intended and adapted for performing two operations simultaneously; that is, the formation of stitch impressions on the upper face of a sole edge and setting or burnishing the edge of the sole. This machine is adapted for performing such operations on light-weight McKay shoes or turned shoes.

*Int.* 1414. Purely ornamental, is it not?

*Ans.* No, sir; I should hardly regard the edge setting as pure ornamentation.

*Int.* 1415. You say that a fudge-edge machine operates to ornament as well as set the edge?

*Ans.* Yes, sir.

*Int.* 1416. I notice in question 709 reference is made to a fudge-edge machine. If that machine was covered by a patent, so far as you know, will you kindly point out what patent?

*Ans.* That machine was covered by patent 852,703, Carnes, granted May 7, 1907, wheeling and edge-setting machine.

*Int.* 1417. Then, is the term "fudge edge" a fanciful term?

*Ans.* The term "fudge-edge maker" or "fudge-edge machine" is one which has been used to describe a machine or tool for performing two operations,—performing simultaneously these two operations. I do not know the origin of the expression.

*Int.* 1418. Reference has been made in the same question to a wheeling machine. Kindly state how the operation of the wheeling machine differs from the operation of the fudge-edge machine.

*Ans.* Booth wheeling machines were used for the purpose of making a stitch impression upon the upper face of the edge of the sole of a welt shoe to prepare that face of the sole edge for the operation of the stitch-burnishing machine.

The fudge-edge machine, so far as its wheel operation was concerned, was complete in itself; that is, the upper face of the sole edge operated upon by the fudge-edge machine did not require any further treatment, and specifically did not require any burnishing, as did the edge of the welt shoe after it had been operated upon by the wheeling machine. The operations of the two machines further differed in that the fudge-edge machine was not adapted for use upon welt shoes, and its field was limited, as I have already stated, to light McKays or turns. This Exhibit 30, which is a shoe which has been operated upon by the fudge-edge maker, is a light McKay.

*Int.* 1419. Was the wheeling machine referred to in the question the subject-matter of a patent? And, if so, state what one.

*Ans.* Booth Brothers had two types of wheeling machines; one, known as the ratchet wheeler, was covered by the patent 817,309, granted April 10, 1906, Flynt; and No. 826,352, granted July 17, 1906, Olson and Flynt. The first was clutch and the second shoe machine. That machine was inactive at the time of the acquisition, as it had been superseded by an improved machine known as the Booth geared wheeler, which was covered by patent 958,913, granted May 24, 1910, Flynt imitation stitch machine.

*Int.* 1420. Reference is made in the same question to upper-shap-

ing machine. Kindly state whether the upper-shaping machine relates to the shaping of uppers.

*Ans.* Yes, sir. That was a simple machine for holding the upper of a shoe while it was cleaned.

*Int.* 1421. Patented?

*Ans.* I believe not. It was a very simple machine.

*Int.* 1422. Reference is also made in the same question to beading machine, notably the Columbia and Victor. Kindly state whether the beading operation related to uppers or to some other part of the shoe.

*Ans.* This beading operation was the operation known as upper beading. The operation was performed in the turning right side out of the lining and upper after they had been sewed together, that sewing operation being performed while the lining and upper are wrong side out.

*Int.* 1423. In answer to question 709, you refer to the Stillman A. West patent. While you may have given the date and number at some other point, I will ask you to kindly point out at this stage the date and number of the patent, if you can conveniently do so.

*Ans.* Later in the record I stated the number and date of the patent to Stillman A. West under which the Rochester lacer was manufactured. I believe I have not the date at hand, but possibly you will not be interested when I state that that patent was never acquired by the United Shoe Machinery Company, but that some years before the date of the Booth Brothers acquisition an exclusive license under the patent was granted to, and is still held by, the Boston Machine Works, of Lynn.

*Int.* 1424. Are the Boston Machine Works related in any way to the United Company?

*Ans.* No, sir.

*Int.* 1425. Did the United Company ever put out the Rochester lacer?

*Ans.* I think not; if it did, it purchased the machine from the Boston Machine Works.

*Int.* 1426. In answer to question 719, page 655, you refer to the

pending application. Kindly state whether the application referred to has merged into a patent.

*Ans.* No, sir.

*Int.* 1427. In answer to question 759, on page 660, you speak of a patent on a machine, the patent having expired. Will you kindly state what patent you had reference to, if you can do so at the present time?

*Ans.* I have not at hand the data of the patent on the Booth upper-shaping machine, but will look it up if you desire.

*Int.* 1428. If you can get at it readily without any loss of time and annoyance, I would like it; otherwise, not.

*Ans.* I shall be glad to get it.

*Int.* 1429. In cross-question 763, on page 660, reference is made to a heel-burnishing machine. Kindly advise whether the heel-burnishing machine is used for any purpose other than polishing or burnishing the heel.

*Ans.* I am not aware that a heel-burnishing machine is ever used otherwise than for burnishing heels.

*Int.* 1430. And the burnishing operation is a finishing operation, is it not?

*Ans.* Yes, sir.

*Int.* 1431. In answer to cross-question 765 reference is made to various pending applications. Will you kindly state whether any of those applications have merged into patents?

*Ans.* Application serial No. 252,647 has matured into patent 1,030,049, granted June 18, 1912. Application serial No. 304,880 has matured into patent No. 1,024,612, granted April 30, 1912.

*Int.* 1432. If you will give the titles, please?

*Ans.* The title of the first is: "Burnishing tool for boots and shoes." The title of the second is: "Tool for finishing the heels of boots and shoes."

*Int.* 1433. Does that take them all?

*Ans.* The patent on the other application, serial No. 252,646, has not yet issued.

*Int.* 1434. In question 770 reference is made to pending applications; the same are not, however, identified. Will you kindly

state whether those applications are pending or whether patents have been issued upon them?

*Ans.* I shall have to see the schedule, to identify the applications, Mr. Webster. [Examines schedules, Exhibits 117 and 118.] The application serial No. 245,704 has matured into patent 946,789, granted January 18, 1910, Smith, needle for shoe-lacing machines. On the schedule is enumerated application serial No. 296,-385. That may be an error, as I find that the application serial No. 296,388 was filed January 16, 1906, and matured into patent 962,105, Smith, granted June 21, 1910, fastening machine. Serial No. 245,704 matured into patent 946,789, granted January 18, 1910; I have already given that, I believe. Application serial No. 259,839 was for reissue of patent No. 779,008, granted January 3, 1905.

*Int.* 1435. The title?

*Ans.* "Machine for automatically lacing shoe uppers." That re-issue was granted on April 23, 1907, No. 12,638. That accounts for the three applications enumerated in the schedule.

*Int.* 1436. In answer to cross-interrogatory 787, page 665, reference is made to infringing some patents that cover the machine of Campbell and Nichols, which I understand was a tack puller. Will you kindly specify what patents you have reference to?

*Ans.* The patent which was infringed by the experimental machine of the United Company which was being developed at the time of the acquisition of the tack puller patents of the Brockton Supply Company was No. 777,795, granted December 20, 1904, Lyon.

*Int.* 1437. The title?

*Ans.* "Machine for pulling lasting tacks."

*Int.* 1438. In answer to cross-question 796, on page 666, you refer to an application by serial number and date. Kindly state whether a patent was issued on that application.

*Ans.* Courteau application serial No. 320,611 matured into patent No. 891,912, granted June 30, 1908, machine for supporting shoe uppers.

*Int.* 1439. Referring to acquisition of the property of Booth

Brothers, you refer to a considerable extent to perforating machines. Kindly state whether these machines related to or were designed for ornamenting the uppers of shoes, or for some other purpose.

*Ans.* They were designed for ornamenting uppers or parts of uppers of boots and shoes.

*Int.* 1440. Referring to the acquisition from Arnold, you speak of cementing machines, and I understand you to say that the patent and machine became valueless because of a machine put out by manufacturers having adhesive material. Kindly state if I am correct in my understanding.

*Ans.* The machine constructed under Dunn patent No. 728,793, May 19, 1903, and 930,593, August 10, 1909, was intended and adapted for applying cement to the flesh side of an insole preparatory to the application to the insole of reinforcing material. At about the time of the acquisition of these patents by the United Company prepared canvas, that is, canvas having adhesive material on it, or rather, canvas which was already provided with adhesive material, was put upon the market by several concerns other than the United Company, and as the use of this canvas effected a considerable economy over the older operation of cementing the canvas in the shoe factory, as well as being much cleaner and more convenient, the prepared canvas went into almost universal use, so that there was no longer any demand for machines constructed under the patents acquired from Arnold.

*Int.* 1441. In answer to cross-question 839, page 675, you seem to refer to needles furnished to users of Goodyear machines. Will you kindly define what you mean by "Goodyear machines" in that connection?

*Ans.* Welters and stitchers.

*Int.* 1442. Then, as I understand you, welters and stitchers put out by the United Company are commercially known as Goodyear machines; am I correct?

*Ans.* The weler put out by the United Company is known as the Goodyear weler, and the stitcher put out by the United Com-

pany is known as the Goodyear stitcher ; that is, colloquially. Of course, the company has its own names for different models.

*Int.* 1443. Referring to your testimony relating to the acquisition from the American Glue Company, I understand no patents or inventions were involved in the transaction ; am I correct ?

*Ans.* I believe so.

*Int.* 1444. Referring to your testimony with reference to brushes, it is my understanding that the brushes are used for finishing purposes ; kindly advise if I am correct.

*Ans.* If that term be used with a broad meaning, it probably covers the various uses to which brushes are put. It should be broad enough to include cleaning.

*Int.* 1445. On page 683 reference is made in your examination to cementing machine acquired from Joseph P. Curtis. Kindly state whether the machine or device referred to was the subject-matter of a patent.

*Ans.* Yes, sir. This machine was covered by patent No. 789,718, granted May 16, 1905, J. P. Curtis, machine for applying adhesive or other coatings to sheets. At the time of the acquisition the application for this patent was still pending, serial No. 174,913, filed September 28, 1903.

*Int.* 1446. Reference is made in your examination, on page 685, to a Kreig machine for trimming the heel and sole. Kindly say whether the machine referred to by you was patented.

*Ans.* Yes, sir. The patent was No. 560,829, granted May 26, 1896, G. A. Ambler, rounding or trimming machine.

*Int.* 1447. The machine, as I understand you, had a cutter with an up and down motion ?

*Ans.* Yes, sir ; a reciprocating knife.

*Int.* 1448. A knife which operated similar to a mortising machine ?

*Ans.* Well, the knife had an up and down and back and forth movement. It was arranged to feed the work as well as to cut off the material which it was designed to remove.

*Int.* 1449. So that it is not, as I understand, to be used on the Goodyear sole ?

*Ans.* Yes, sir; in trimming the heel seat of a Goodyear shoe.

*Int.* 1450. Is it not true that the Goodyear soles are oftentimes cut to shape at the outset, the shape following the contour of the finished sole?

*Ans.* I believe that they are never so shaped prior to the — never so shaped at the heel end of the sole prior to the operation of the Goodyear outsole stitcher as put out by the United Company.

*Int.* 1451. I find here, in answer to question 934, a patent is mentioned. I take it to be the patent you have just testified to, 560,829, May 26, 1896.

*Ans.* That is the number of this patent; yes, sir.

[*Adjourned to 10.30 A. M., July 16, 1913.*]

BOSTON, MASS., July 16, 1913.

*Int.* 1452. During the course of your examination, you kindly consented to bring in data and memoranda with reference to various matters you were unable to give during the time you were testifying. If you have any of that data, will you kindly spread it on the record at the present time?

*Ans.* You wished me to ascertain from whom the United Company was purchasing peg wood prior to the acquisition of the business of B. F. Sturtevant. I find that all the peg wood purchased by us prior to that date was obtained from B. F. Sturtevant. You requested the names of the users—the names of some users of the present commercial shank-sticking machine of the United Company. The names of four of the users are as follows: Endicott, Johnson & Company, Leicestershire, New York; George B. Jones & Company, Manchester, New Hampshire; Sears, Roebuck & Company, Springvale, Maine; A. E. Little & Company, Brockton, Massachusetts. You requested me to name one or more parties for whom the Carver Cotton Gin Company made machines under contract prior to the acquisition of the business of the — shoe machinery business of the Carver Company by the United Company. I am informed that the Carver Company made all the machines which were put out by S. D. Tripp until the Tripp patents ran out, after which the Carver Company made and sold these Tripp machines itself.

*Int.* 1453. Kindly state what character of machine you refer to when you speak of the Tripp machine.

*Ans.* As I recall, the Tripp machine was an edge-setting machine which became obsolete long ago. You requested me to obtain the data of the expired patents on the Acme leveling machine. These patents were No. 266,283, Gilmore, dated October 24, 1882, sole leveling machine; No. 344,650, Gilmore, dated June 24, 1886, sole leveling machine, and No. 403,495, Strong, dated May 14, 1889, sole leveling machine. You requested me to look up the expired patents on the Booth upper shaper. I find that these patents were numbered 355,966, I. E. Booth, dated January 11, 1887, a machine for stretching and finishing shoes, and No. 364,885, I. E. Booth, dated June 14, 1887, shoe-stretching machine. Perhaps I should add that I had learned that the machine had become obsolete before the acquisition of the business of Booth Brothers. You requested me to ascertain whether any of the applications for the patents of the Ellis Lacer Company had been involved in interferences with the applications for any other of the patents of the Ellis Lacer Company. A brief investigation indicates that there were no such interferences. You requested me to state the names of some users of the United Company's Model B McKay sewing machine. May I inquire as to the location of factories which you would prefer?

*Int.* 1454. Anything that is within easy reaching distance.

*Ans.* I will then name the following manufacturers located in Lynn as users of the Model B McKay sewing machine: Allen, Foster, Willett Company, George F. Daniels Company, William H. Ingalls Company, Adams Shoe Company, Tufts & Friedman, C. E. Blake & Company, John R. Donovan & Company. You also requested me to look up the data of the interferences in which the Stanbon application for channel-cementing machine, on which was granted patent 1,004,705, was involved, and to ascertain how many patents had been granted on the applications which were involved in those interferences. I find that the Stanbon application was involved in nine interferences, of which I can give the data if you desire.

*Int.* 1455. If you can give some of the data very briefly, that, perhaps, will be sufficient.

*Ans.* The numbers of the interferences in which the Stanbon application was involved were No. 25,427, 25,428, 25,429, 25,430, 25,431, 25,432, 25,433, 26,519, 26,520. Replying to the second part of your question, in addition to the Warren patent 1,030,623 and the Stanbon patent, to which I referred yesterday, I find that the following patents have been granted upon applications which were involved in one or more of these interferences: No. 1,030,-659, C. E. Howe, dated June 25, 1912, cementing machine; No. 1,043,083, F. M. Furber, dated November 5, 1912, cementing machine. That is all the information that I have been able to get so far in response to your requests.

*Int.* 1456. You have testified to a considerable extent with reference to assignments of patents. Kindly state whether you have custody of the records of assignments, or whether you procured your information from some other official.

*Ans.* I personally have charge of all assignments of patents to the United Company, which are kept in safes in my offices.

*Int.* 1457. Do you also have charge of assignments of patents to the companies that are associated or affiliated with the United Company?

*Ans.* I have the custody of the assignments of nearly all, if not all, of those companies.

*Int.* 1458. In testifying in reference to the Arthur Fuller acquisition referred to in Exhibit 98, I understand you to say that the machine purchased of Arthur Fuller, doing business under the name of American Sole Laying Machine Company, was a double sole-laying machine, and that the United Company afterwards purchased a sole-laying machine from the Boot & Shoe Laying Machine Company, and that afterwards there was some combination of these machines which together went to make up the Goodyear improved twin sole-laying machine. Kindly state whether my understanding or interpretation of your testimony is correct. You will find that on page 697, and following.

*Ans.* The United Company had, previously to the acquisition

of the patents of the American Sole Laying Machine Company, acquired patents from the Boot & Shoe Sole Laying Company, under which it was putting out a single form sole-laying machine. The American Company held a license under Cutcheon patent No. 384,893, dated June 19, 1888, which enabled the American Company to put out a two-form sole-laying machine. That patent prevented the United Company from transforming its single-form machine into a two-form machine until this license was required from the American Company. After that acquisition, the United Company made a two-form machine of the machine which it had acquired from the Boot & Shoe Company, and that machine, as improved by the embodiment in it of subsequent inventions, is known as the Goodyear improved sole-laying machine.

*Int.* 1459. Did the American Sole Laying Company put out the sole-laying machine prior to the acquisition of the assets of that company by the United Company?

*Ans.* Yes, sir.

*Int.* 1460. And for how long a time prior to such acquisition had the American Sole Laying Company been putting out such machine?

*Ans.* I cannot state at this time for how long a period. I think, however, that they had put out such a machine for several years.

*Int.* 1461. By "several years" do you mean three or four or five or six or seven years?

*Ans.* I cannot state it more accurately without looking it up.

*Int.* 1462. Do you know if many such machines had been put out by the American Sole Laying Machine Company?

*Ans.* I cannot from memory state the number more definitely than to say that I am confident that it was a substantial — that they had put out a substantial number of machines.

*Int.* 1463. Did the United Company put out any machines after its purchase from the American Sole Laying Machine Company constructed like the machines which had previously been put out by the American Sole Laying Machine Company?

*Ans.* After the acquisition of the American Sole Laying Machine Company the United Company put out the improved machines to

which I have referred, which embody the inventions of several of the patents acquired from the American Company. I am not advised whether or not machines identically like the drawings of any of the patents acquired from the American Company were put out by the United Company after the acquisition of those patents.

*Int.* 1464. Then, as I understand you, the acquisition from the Boot & Shoe Sole Laying Company was prior to the acquisition from the American Sole Laying Machine Company?

*Ans.* Yes, sir.

*Int.* 1465. And can you state for how long a time the Boot & Shoe Sole Laying Company had been putting out its laying machine prior to the acquisition of the assets of that company by the United Company?

*Ans.* The Boot & Shoe Sole Laying Company had been putting out its machine for some years prior to the acquisition of its patents by the United Company.

*Int.* 1466. State, if you know, whether they had put out a substantial number of machines.

*Ans.* I think they had put out the machine in considerable numbers.

*Int.* 1467. Did the United Company put out machines constructed like those previously constructed by the Boot & Shoe Sole Laying Company?

*Ans.* Yes, sir.

*Int.* 1468. And for how long a time did it continue to do so?

*Ans.* The United Company has continuously, since the date of the acquisition of patents of the Boot & Shoe Sole Laying Company, put out machines substantially like those put out by that company, except that, as I have already stated, the machine was made a two-form machine after the acquisition of the patents of the American Sole Laying Machine Company, and the machine has further been substantially improved from time to time by the embodiment in it of other inventions.

*Int.* 1469. Is the machine known as the Goodyear improved twin sole-laying machine the same machine you refer to in your last answer?

*Ans.* Yes, sir. Perhaps I should add that the machine may not have been known by that name during the entire period.

*Int.* 1470. State as nearly as you can for about how long a period of time the machine in question has been known as the Goodyear improved twin sole-laying machine.

*Ans.* Before the twin machine was developed subsequently to the acquisition of the patents of the American Sole Laying Machine Company, the machine put out by the United Company under the patents acquired from the Boot & Shoe Sole Laying Company was known as Goodyear improved sole-laying machine. This was the name by which the machine was known in 1902. I think it was within a short time after that date that the twin machine was developed.

*Int.* 1471. Kindly state whether an illustration of the Goodyear improved sole-laying machine referred to by you is found in the catalogue produced by you, published in 1902; and, if so, state upon what page the illustration is found.

*Ans.* Yes, sir. This machine is illustrated on page 22 of that catalogue.

*Int.* 1472. Will you briefly point out to the court the difference in construction of that machine from the construction of the machine of the Boot & Shoe Sole Laying Company?

*Ans.* The machine shown on page 22 of the catalogue in question is substantially the same machine which was put out by the Boot & Shoe Sole Laying Company.

*Int.* 1473. Have you an illustration of the Goodyear improved twin sole-laying machine?

*Ans.* I have not such an illustration with me.

*Int.* 1474. Will you kindly produce one?

*Ans.* I shall be glad to.

*Int.* 1475. Kindly state whether the sole-laying machine illustrated on page 22 of the catalogue is a single or a double machine.

*Ans.* It is a single machine.

*Int.* 1476. Is the single machine like the illustration referred to being put out at the present time by the United Company?

*Ans.* If manufacturers call for it, — but I think manufacturers

always prefer the double machine on account of its much greater capacity.

*Int.* 1477. Then, as I understand you, it is not being put out so far as you know?

*Mr. CHOATE.* Would it be more correct to say it is not called for?

*Mr. WEBSTER.* His answer is: "Not unless."

*Int.* 1478. The question is whether you have any knowledge as to whether the machine is in fact put out or not.

*Ans.* I cannot state at this time, because I have no occasion to have such information.

*Int.* 1479. Referring to the acquisition from the O. A. Miller Company referred to in Exhibits Nos. 93, 94 and 95, relating to treeing machines, I understand you to say that that was a new branch and that the treeing machines are essential for the process of finishing shoes. Kindly refer to the record on page 701, interrogatory 1072 and following, and state whether my understanding is correct.

*Ans.* At the date of this acquisition, the United Company had no machines of any description adapted for use in the treeing of shoes. That operation is the operation of cleaning and finishing the uppers after the manufacture of the shoe has been otherwise substantially completed.

*Int.* 1480. Kindly state just what you mean by the employment of the term "essential".

*Ans.* I did not use that expression.

*Int.* 1481. You seem to have adopted it as it was incorporated in the question. Kindly state, then, whether you intended to say in your cross-examination that treeing machines were essential to the process of finishing shoes.

*Ans.* As I read my answer to cross-interrogatory 1073, I seem to have answered the second part of that interrogatory and to have overlooked the first part.

*Int.* 1482. Will you now state whether you consider the treeing machines referred to essential to the process of finishing shoes?

*Ans.* I will answer that question by stating that present trade

conditions require that the treeing operation be performed upon shoes in the course of their manufacture.

*Int.* 1483. Will you kindly state just what you mean by the word "essential"?

Mr. CHOATE. He has not used it.

Mr. WEBSTER. I think he did in the last answer.

[*Answer read by the stenographer.*] ]

*Int.* 1484. Are you willing to state whether you used the word "necessary" as synonymous with "essential"?

*Ans.* I believe I have used neither word.

*Int.* 1485. Kindly state whether you used the word "require" as synonymous with "essential".

*Ans.* I intended to use the word "require" with its ordinary meaning.

*Int.* 1486. Referring now to the eyelet purchases, I think you produced at the time of your cross-examination some specimens of eyelets made under certain of the patents referred to by you. Will you kindly produce some duplicates?

*Ans.* I now produce samples of fast-color eyelets.

The EXAMINER. Samples of fast-color eyelets are "Plaintiff's Exhibit 193".

[*Ans. continued:*] Also samples of enamel eyelets.

The EXAMINER. Samples of enamel eyelets are "Plaintiff's Exhibit 194".

*Int.* 1487. Kindly point out briefly what patents cover the fast-color eyelets and what patents cover the enamel eyelets.

*Ans.* The fast-color eyelet was covered by patent No. 557,992, Kempshall, granted April 7, 1896, "eyelet". At the time of the acquisition there was pending an application covering the dies which were used in applying celluloid to the eyelets, which application had been filed February 9, 1895. That application was forfeited and was renewed August 23, 1902, serial No. 120,856. A patent was granted on the renewed application, No. 786,694, Kempshall, dated May 9, 1905, "dies for applying covering material to the faces of eyelets". The method of covering these fast-color eyelets was originally claimed in the die application filed

February 9, 1895. A divisional application covering this method was filed April 17, 1905, serial No. 255,990, on which application was granted patent No. 789,695, Kempshall, dated May 9, 1895, "method of forming eyelets".

*Int.* 1488. In answer to cross-question 1110, on page 707, you say that the Boot & Shoe Sole Laying Company, you are confident, had some of the Eppler patents, which you were to supply later. Kindly advise whether you have the list at the present time.

*Ans.* I can now state, if you desire, the data of all the patents or inventions which were incorporated in the machine of the Boot & Shoe Sole Laying Company at the time of its acquisition.

*Int.* 1489. Kindly give the name, title and date of the patents referred to in your answer to question 1110, on page 707, referred to as Eppler patents.

*Ans.* The Eppler patent to which I had reference in that answer was No. 315,923, April 14, 1885, "Eppler sole laying machine".

*Int.* 1490. Is that all?

*Ans.* My answer, to be responsive, should include other patents granted to Andrew Eppler, Junior, in addition to the one which I just named. The one which I named covered an invention embodied in the commercial machine, and in addition —

*Mr. CHOATE.* Wait a minute. What commercial machine?

The WITNESS. In the commercial machine put out by the Boot & Shoe Sole Laying Company at the time of the acquisition of its patents. Other patents acquired in that transaction which were granted on application of Andrew Eppler, Junior, were as follows: No. 304,415, September 2, 1884, sole-laying machine; No. 304,416, September 2, 1884, sole-laying machine; No. 315,922, April 14, 1885, sole-laying machine; and No. 315,924, April 14, 1885, sole-laying machine.

*Int.* 1491. Referring to the Swain-Fuller Company acquisition (Exhibit 88), you refer in answer to question 1112, page 707, to "the Star leveling machine". Will you kindly briefly describe the construction of the Star leveling machine referred to by you?

*Ans.* The Star leveling machine as it was constructed at the time of the acquisition of the patents of the Swain-Fuller Manufacturing

Company was constructed substantially as shown in patent No. 435,882, A. K. Washburn, granted September 2, 1890, sole leveling machine, with the changes in that machine, shown in Washburn patent No. 435,883, granted September 2, 1890, sole-leveling machine.

*Int.* 1492. Kindly state whether the term "Star" as used in connection with a leveling machine was a trade name or designation.

*Ans.* It was a trade name in the proper sense, that is, an arbitrary name adopted by the manufacturers. It did not indicate any type of machine at the time the name was adopted.

*Int.* 1493. Does it now indicate a particular type of machine?

*Ans.* The name is still used to designate the machine which is still manufactured and put out by the United Company substantially as shown in the patents which I named.

*Int.* 1494. If the Star leveler is illustrated in the catalogue heretofore referred to, will you kindly point out the page?

*Ans.* The Star leveling machine is illustrated on page 171 of the 1902 catalogue of the United Company.

Mr. WEBSTER. Counsel for the Government offers in evidence the cut and printed matter on page 171 of catalogue of 1902.

[*Cut and printed matter on page 171 of catalogue of the United Shoe Machinery Company marked "Plaintiff's Exhibit 195".*]

Mr. WEBSTER. Counsel for the United States also offers in evidence cut of the Goodyear improved sole-laying machine and the printed matter shown on page 22 of the catalogue.

[*Cut and printed matter on page 22 of catalogue of United Shoe Machinery Company marked "Plaintiff's Exhibit 196".*]

*Int.* 1495. In answer to question 1132, on page 709, you say that the United Company had no machines for doing the work of nineteen of the machines referred to by you procured of the Ross-Moyer Company and specified in answer to cross-interrogatory 1118. You say that one of them, the heel seat beading machine, was a duplicate or did the same work as one which the company already had. On counting the list I find but nineteen in the list. Will you kindly state whether I am in error or whether some correction is required in your answer?

*Ans.* The list is correct, and I should have said eighteen instead of nineteen in my answer to cross-interrogatory 1132.

*Int.* 1496. The first on the list appears under the heading of "rolling machine". Will you kindly briefly state what a rolling machine is?

*Ans.* The chief use to which a rolling machine is put is to apply heavy pressure by means of rolls to sides of sole leather, to smooth it out and correct so far as possible lack of uniformity in thickness and in hardness of the stock.

*Int.* 1497. Kindly state briefly what a bottom-stamping machine is.

*Ans.* That is a machine for making an impression on the bottom of the sole or heel of a shoe.

*Int.* 1498. For ornamentation?

*Ans.* This impression may be of an ornamental character, but is more usually a trademark.

*Int.* 1499. Kindly state whether the button fly scalloping machine relates to treatment of uppers only.

*Ans.* It does.

*Int.* 1500. And heel seat beading machine relates to ornamentation?

*Ans.* I suppose the operation of that machine should be regarded as for the purpose of ornamenting the shoe, since the object of the operation is to improve the appearance of the shoe.

*Int.* 1501. Please explain briefly what the sole-gauging machine is.

*Ans.* I can state more definitely after recess.

**MR. CHOATE.** Are you ready with your answer to the question, which was not answered, as to the sole-gauging machine?

**THE WITNESS.** The sole-gauging machine of the Ross-Moyer Company was a machine for measuring and indicating to the operator the thickness of soles.

*Int.* 1502. Kindly state whether any patents were transferred by the Ross-Moyer Company to the United Company.

*Ans.* No, sir; the United Company acquired the stock of the

Ross-Moyer Company and the patents owned by that company remained in its possession.

*Int.* 1503. Does the Ross-Moyer Company now exist as a corporation?

*Ans.* Yes, sir.

*Int.* 1504. And I think you have heretofore testified that the officers of the Ross-Moyer Company are the same as the officers of the United Company?

*Ans.* I don't recollect whether I so testified.

*Int.* 1505. Do you know who the officers of the Ross-Moyer Company are?

*Ans.* No, I do not.

Mr. CHOATE. That was furnished by Mr. Donham to Mr. Gregg on one of the last days of the hearing, and is in the record somewhere. The Ross-Moyer Company is one of the defendants, you know.

*Int.* 1506. Kindly state whether the machines referred to in your answer to question 1134, on page 710, were manufactured and put out by the Ross-Moyer Company at the time of the acquisition of the stock of that company.

*Ans.* Yes, sir; all of those machines were being put out by the Ross-Moyer Company at the time the United Company acquired the stock of that company.

*Int.* 1507. I note the contract is dated September 20, 1900. Kindly state for how long a time, if you are able to tell, the Ross-Moyer Company were putting out the machines referred to in the previous question prior to the date of the contract.

*Ans.* The several machines had been put out by the Ross-Moyer Company for periods varying approximately with the dates of the respective inventions which were embodied in the machines.

*Int.* 1508. You have no record of the dates of the inventions, I assume?

*Ans.* The inventions were presumably made prior to the dates of the patents granted upon them.

*Int.* 1509. Then is it fair to say that the buffing machine was put out as early as April 29, 1890?

*Ans.* It was probably put out at about that time, or as soon after that date as a commercial machine could be constructed.

*Int.* 1510. Does the same answer apply to the bottom-stamping machine, the date of the patent of which is September 30, 1890?

*Ans.* I think that machine was put out at about that date or soon after.

*Int.* 1511. I note that you state that the embossing machine is covered by a patent dated December 2, 1890. Is it your understanding that the machines were put out at about that time?

*Ans.* I think so.

*Int.* 1512. I note that the patent as stated by you on the edge-setting machine is dated August 23, 1887. Is it your understanding that edge-setting machines were put out by that company at that date?

*Ans.* If you desire to know the dates at which the various machines were put out, I can ascertain them for you and would prefer to get the exact dates rather than to state them from memory.

*Int.* 1513. Will you kindly do so and testify to the facts inquired about at the next session?

*Ans.* I may be obliged to write to Cincinnati to get the information, but if available in Boston I will procure it before the next session.

*Int.* 1514. If you can state the dates approximately at the present time, I will be quite content.

*Ans.* I can really only guess at them, as I had no occasion to carry the dates in mind.

*Int.* 1515. Referring now to the Bay State International Shoe Machinery Company, Exhibit 86, you refer as I understand it to welting, stitching and rough-rounding machines, the reference being on page 710, cross-interrogatory 1135 and following. Kindly state whether those machines were the subject of United States patents.

*Ans.* I am prepared to give you the data of the British patents which were owned by the Bay State International Shoe Machinery Company. So far as I am advised, that company owned no United States patents.

*Int.* 1516. Kindly give the data of the foreign patents referred to by you.

*Ans.* The British patents of the Bay State International Shoe Machinery Company were as follows: 20,544 of 1897, dated September 7, 1897, —

*Int.* 1517. Give the title, if you will, Mr. Howard.

*Ans.* "Improvements in sewing machines for the manufacture of boots and shoes"; the machine of this patent was a chain stitch machine. No. 15,309 of 1898, dated July 12, 1898, improvements in waxed thread sewing machines. This machine was a chain stitch machine, and the patents covered the welting machine of the Bay State International Company. No. 24,853 of 1898, dated November 24, 1898, improvements in thread tension devices for sewing machines. This patent covered the welting machine of the Bay State International Company. No. 263 of 1899, dated January 5, 1899, improvements in sewing machines for use in the manufacture of boots and shoes. This machine covered the stitcher of the Bay State International Company.

*Int.* 1518. Was that a lockstitch?

*Ans.* The outsole lockstitch machine of the Bay State International Company, No. 4600 of 1899, dated March 2, 1899, improvements in stitch supporting and indenting machines for use in the manufacture of boots and shoes. No. 4645 of 1899, dated March 2, 1899, improvements in sewing machines for use in the manufacture of boots and shoes. This patent covered the outsole lockstitch machine of the Bay State International Company. No. 5952 of 1899, dated March 18, 1899, improvements in sole rounding and channeling machines. This company also owned certain French patents corresponding to the British patents above enumerated.

*Int.* 1519. Kindly state whether, so far as you know, the machines built under the patents referred to by you in the last answer went into extensive use in any country; and, if so, in what countries.

*Ans.* There were about ten sets of the machines put out in England.

*Int.* 1520. But none, so far as you know, put out in the United States?

*Ans.* My previous answer is the extent of my knowledge on the subject.

*Int.* 1521. To return briefly to the peg wood matter, kindly state whether, so far as you know, there was any concern putting out peg wood at the time the United Company acquired the peg wood interests of the Sturtevant Company.

*Ans.* At that time peg wood was being manufactured and sold by J. C. Lewis, of Orono, Maine, and by the United States Pegwood & Shank Company, of Charlestown.

*Int.* 1522. Do you know whether the concerns referred to in your answer are now in business?

*Ans.* I do not. My inquiry which produced this information was directed to conditions at the time of the Sturtevant acquisition as requested by you yesterday.

*Int.* 1523. Kindly state whether you have illustrations of the machines of the Bay State International Company to which you have made reference in your testimony.

*Ans.* Not except as they are illustrated in the drawings of the patents to which I have referred.

*Int.* 1524. Referring to the acquisition from the Stanley Manufacturing Company, you referred in your testimony on cross-examination, on page 711, to channeling machines. Kindly state whether you have an illustration of the type of channeling machine which was being manufactured by the Stanley Company at the time of the acquisition of the assets of that company by the United Company.

*Ans.* The assets of the Stanley Manufacturing Company were not acquired by the United Company.

*Int.* 1525. In answer to cross-interrogatory 141, on page 711, I understand you to say that one of them, for channeling insoles, and another a combined rough rounder and channeler for trimming the edge of the sole of a Goodyear shoe, and at the same time forming the channel to receive the outsole stitch, were put out by the United Company. Kindly state whether they were put out in the United States.

*Ans.* The United Company was putting out in the United States

machines for channeling insoles for welt shoes and machines for simultaneously rough rounding and channeling the outsoles of welt shoes.

*Int.* 1526. Kindly state whether the machine referred to by you for rough rounding and channeling is illustrated in the catalogue of the United Company of 1902; and, if so, point out the page or pages.

*Ans.* The rough rounding and channeling machine put out by the United Company in 1902 is illustrated on page 18 of the 1902 catalogue.

*Int.* 1527. Kindly state whether the rounding and channeling machine illustrated on page 18 of the catalogue referred to and described on page 19 is constructed as set forth in any of the patents purchased by the United Company of any other company.

*Ans.* I am not aware that that is the fact.

*Int.* 1528. Are you willing to state whether the machine illustrated on page 18 of the catalogue and referred to on page 19 as the "Goodyear Universal Rounding and Channeling Machine" is constructed in accordance with the descriptions and drawings of any patent?

Mr. CHOATE. I think I will record my objection to that question because it is not open to anything on cross-examination, and I will ask the witness not to answer it.

The WITNESS. Under instruction of counsel, I decline to answer that question.

Mr. WEBSTER. The attention of the court is respectfully called to the fact that, while Mr. Howard is a witness produced by the United States, he declines to answer because of instructions from counsel for the defendants.

[*Counsel for the United States offers in evidence the cut identified by the witness and found on pages 18 and 19 of the catalogue of 1902. Cut on pages 18 and 19 marked "Plaintiff's Exhibit 197".*]

*Int.* 1529. You referred in your cross-examination, page 711, to a leveling machine, the same being a patented device procured from Winkley and Phillips which you afterwards developed into the Atlas leveler. Kindly state whether the Atlas leveler referred

to by you is illustrated in the catalogue of 1902; and, if so, kindly give the page.

*Ans.* I do not find the Atlas leveling machine in the index of this catalogue.

*Int.* 1530. Kindly state what you mean by the term "afterwards developed into the Atlas leveler".

*Ans.* I mean that the inventions acquired from Winkley and Phillips were experimented upon and developed, with the addition of other inventions, into a machine which was suitable for commercial use, and was put out for commercial use.

*Int.* 1531. Are you willing to produce an illustration of the Atlas leveler?

*Ans.* Certainly.

*Int.* 1532. In the question referred to reference is made to the device's being a patented device, and on page 713 you say: "The patent which was the subject of that agreement was No. 627,034, June 13, 1889. Am not sure that there were not others." Kindly state whether since that time you have ascertained whether there were others; and, if so, give the name, date and title.

*Ans.* There was at least one other, No. 557,744, April 7, 1896, Winkley sole-laying machine.

*Int.* 1533. Can you state briefly how the Atlas sole-laying machine differed from the Star?

*Ans.* The Atlas was a direct pressure machine, so called, which applied the leveling pressure to the sole through an iron form which was formed to give the desired shape to the sole, and during the application of pressure by that form the shoe was supported against the pressure by an iron form or last inside of the shoe. That type of machine was adapted and used for McKay work. The Star leveling machine was of an entirely different type. In that machine the leveling pressure, very much lighter than applied by the Atlas machine, was applied by a roll which was rapidly vibrated to and fro for short distances over the portion of the shoe being operated upon at the time, and which was, by relative movement of the roll and the shoe, made to operate successively upon different portions of the sole. The pressure was applied to the

roll through a spring so that a yielding pressure was exerted upon the shoe.

Mr. CHOATE. Have you finished by stating to which kind of shoe the Star was adapted?

The WITNESS. I should have added that the Star machine was a very light machine and was adapted and used only for leveling turn shoes, which, owing to the fact that they have but one sole, require and will stand a less degree of pressure than other types of shoes.

*Int.* 1534. Among patents referred to by you as having been conveyed to the United Company, I invite your attention to the patent to Coy, sole laying and pressing machine, dated November 20, 1888, No. 393,216. Will you kindly examine the copy of that patent which I now hand you and state whether or not a machine constructed as set forth in the patent was ever made and put out to your knowledge?

*Ans.* That patent was owned by the Swain-Fuller Manufacturing Company, and the American Sole Laying Machine Company had a license under it. I believe that no claims in that patent read upon any machine put out by the United Company, although it is possible that claim three reads upon the commercial machine of the American Sole Laying Machine Company.

*Int.* 1535. Pardon me, but the inquiry did not go to the question of the claim; simply as to the question whether machines were made and put out, so far as you knew, constructed as shown in the patent. With this explanation, will you kindly answer the question?

*Ans.* I cannot recall that machines identically like the machine shown in the drawings of this patent were ever put out by the United Company.

*Int.* 1536. Do you recall that machines substantially the same were ever put out by the United Company or any of its predecessors?

*Ans.* I do not recall.

*Int.* 1537. I observe in answer to cross-interrogatory 1125, on page 713, relative to the Lincoln Sewing Machine Company agreement: "There were patents involved, but I have not a list of

them." Kindly state whether you now have a list of the patents referred to by you.

*Ans.* Yes, sir.

*Int.* 1538. Has it been spread on the record as yet?

*Ans.* I think not.

*Int.* 1539. Will you kindly let us have the list, taking care to give us the name of the patentee, the number, date and title?

*Ans.* The patents assigned to the Goodyear Shoe Machinery Company by the Lincoln Sewing Machine Company on November 18, 1897, were the following: No. 453,568, G. A. Stiles, dated June 2, 1891, sole sewing machine; No. 494,969, G. A. Stiles, dated April 4, 1893, shoe sewing machine; No. 545,625, Fowler and Warren, dated September 3, 1895, sewing machine; No. 560,705, Fowler and Warren, dated May 26, 1896, welt guiding mechanism for sewing machines; 564,985, Fowler and Warren, dated August 4, 1896, sewing machine; No. 564,986, Fowler and Warren, dated August 4, 1896, shoe sewing machine; No. 577,217, E. A. Webster, dated February 16, 1896, sewing machine. On February 17, 1900, the Lincoln Company assigned to the Goodyear Shoe Machinery Company No. 634,850, Fowler and Warren, dated October 10, 1899, shoe sewing machine. That is all.

*Int.* 1540. Kindly state whether the patents referred to in your last answer relate to the type of machine known as the Lincoln sewing machine.

*Ans.* Yes, sir; although not all of them covered the machine of the Lincoln Company as it was constructed in November, 1897.

*Int.* 1541. Kindly state whether any of the patents referred to in your answer relate to construction shown in the machine known as the Goodyear welt and turn machine or the Goodyear rapid out-sole lockstitch machine.

**MR. CHOATE.** I should like an objection noted to that question as not opened by anything on cross-examination.

*Ans.* Under advice of counsel, I decline to answer the question.

*Int.* 1542. On page 713 of the printed record you, in answer to cross-question 1156, refer to patents on lasting machines and pulling-over machines acquired from the Seaver Process Lasting

Company. Kindly state whether machines constructed in accordance with the patents enumerated by you are being manufactured by the United Company at the present time.

*Ans.* No, sir.

*Int.* 1543. Kindly state whether such machines were ever manufactured by the United Company.

*Ans.* No, sir.

*Int.* 1544. Kindly state whether such machines were ever manufactured by any company so far as you know.

*Ans.* The Seaver toe and heel lasting machine was manufactured by the Seaver Company, and they also manufactured several experimental pulling-over machines, so called.

*Int.* 1545. In answer to cross-interrogatory 1158, on page 714, referring to the acquisition of property of the Globe Shoe Tool Company, you say: "I think they had no patents." Kindly state whether since testifying you have ascertained whether there were any patents involved in that transaction.

*Ans.* The Globe Shoe Tool Company owned no patents at the time of this acquisition.

*Int.* 1546. In answer to cross-interrogatory 1159, page 714, you referred to a patent relating to the Brewer improvement on heel breasting. Kindly state whether devices made under, and in accordance with, that patent were manufactured and put out by the United Company.

*Ans.* Yes, sir.

*Int.* 1547. State whether such machines are illustrated in the catalogue of 1902.

*Ans.* Yes, sir; that machine is shown on page 176 of the 1902 catalogue.

Mr. WEBSTER. The cut testified to by the witness offered in evidence, together with the printed matter on page 177, and marked "Plaintiff's Exhibit 198".

*Int.* 1548. Kindly state whether the machine illustrated on page 176 of the catalogue of 1902 is now being manufactured and put out by the United Company?

*Ans.* That machine, with some modifications, is still being manufactured and put out by the United Company.

*Int.* 1549. Will you kindly briefly state the modifications?

*Ans.* After approximately 700 of the machines had been put out incorporating the Brewer invention, an improved construction of mechanism for stopping the knife automatically in accordance with the thickness of the shank of the shoe was adopted. Other changes have been made in the machine from time to time.

*Int.* 1550. Will you kindly state, provided opposing counsel does not object to your doing so, whether the modifications referred to by you now form the subject-matter of United States patents?

*Ans.* These modifications are covered by patents or pending applications.

*Int.* 1551. Will you kindly give the number, date and title of the patents?

*Ans.* I have not the data at hand.

*Int.* 1552. Will you kindly produce it at some future time?

*Ans.* Yes, sir.

*Int.* 1553. Referring now to Edwin T. Freeman's machine, page 714, in answer to cross-interrogatory 1160 you refer to certain patents, and at the end of your answer you say: "He had some other patents." Kindly state whether the other patents referred to by you were transferred to the United Company; and, if so, kindly give us the number, date and title.

*Ans.* I believe there was only one patent transferred by Freeman which I did not name in cross-interrogatory 1160. This was patent No. 607,924, dated July 26, 1898, nailing machine.

*Int.* 1554. Kindly state whether machines made in accordance with the patents referred to in your answer to cross-interrogatory 1160 are now being made by the United Company.

*Ans.* Machines have been constructed and put out embodying the inventions claimed in the patents assigned by Freeman, but no machine exactly like the machines shown in the drawings of the Freeman patents named has been built by the United Company.

*Int.* 1555. If the machine referred to in your last answer is illustrated in the catalogue of 1902, will you kindly point out upon what page the same is found?

*Ans.* Those machines are not illustrated in that catalogue.

*Int.* 1556. Are they illustrated in any catalogue so far as you know?

*Ans.* This is the only general catalogue ever put out by the United Company.

*Int.* 1557. Are they illustrated in any printed matter put out by the United Company?

*Ans.* Freeman's inventions have been embodied in three different types of machines which the United Company has built either commercially or experimentally. One of these machines is "loose nailing machine No. 2", and I can furnish an illustration of that machine. I do not know whether illustrations of the other two machines are available.

*Int.* 1558. If you are able to do so, will you kindly produce them at the next session?

*Ans.* I will.

*Int.* 1559. Referring to the acquisition of the property of the Breach Manufacturing Company, you say, in answer to cross-interrogatory 1171, as I understand your reply, that the Breach Company had the exclusive license for a machine for cutting out soles, and you give the number and dates of certain patents. Kindly state which one of the patents referred to by you in that answer relate to the machine for cutting out soles.

*Ans.* No. 318,540 and No. 589,409 cover the machine of the Breach Company as it stood at the time of this transaction. I ought to add that the machine at that time embodied inventions on which applications for patents were applied after the date of this transaction. On these applications patents were granted as follows: No. 676,457, June 18, 1901, Breach, machine for cutting articles from sheet material, and No. 678,935, July 23, 1901, Breach, machine for cutting articles from sheet material.

*Int.* 1560. Was the Breach machine for cutting out soles manufactured and put into use by the Breach Company?

*Ans.* By the Breach Company?

*Int.* 1561. Yes, the Breach Manufacturing Company.

*Ans.* A small number of machines of earlier types had been put

out by the Breach Company or by Breach personally before the date of this transaction.

*Int.* 1562. Were the machines made and put out by the United Company after the transaction referred to?

*Ans.* The United Company built experimental machines and put them out on trial but could not interest manufacturers to use them.

*Int.* 1563. Then, is it fair to say that machines made under the patents referred to are not such as are known as a commercial success?

*Ans.* Yes, sir.

[*Adjourned to 10 a. m., July 17, 1913.*]

BOSTON, MASS., July 17, 1913.

*Int.* 1564. Kindly state whether you have any more of the data you were requested to produce and which was not convenient for you to produce yesterday.

*Ans.* I have some of the information here but not all. If equally convenient, I will present it all tomorrow morning, excepting the dates when the Ross-Moyer machines were first put out, for which information I must send to Cincinnati. I have already written for it.

*Int.* 1565. Kindly state whether you are able now to produce a cut of the Atlas leveling machine requested yesterday.

*Ans.* I can and do produce such a cut.

Mr. WEBSTER. Cut produced by the witness put in evidence and marked "Plaintiff's Exhibit 199".

*Int.* 1566. Referring to the affairs of the Goddu Sons Metal Fastenings Company mentioned on page 715 of the printed record, you refer to certain patents. Kindly state whether to your knowledge the loose nailer referred to by you in answer to question 1172 was manufactured and put out by the United Company or any of its affiliated companies.

*Ans.* It was not, so far as I am aware.

*Int.* 1567. Kindly state whether the rapid screw machine referred to in the same answer was put out by the United Company or any of its affiliated companies.

*Ans.* It was not, so far as I know.

*Int.* 1568. Kindly state whether the slugger referred to in the same answer was put out by the defendant or any companies associated with the defendants.

*Ans.* So far as I know, that was not put out.

*Int.* 1569. State whether the machine for making the string nail wire was put out by said companies, or either of them?

*Ans.* It was not, so far as I know.

*Int.* 1570. State whether the string nail wire referred to in that answer was put out.

*Ans.* So far as I know, it was not.

*Int.* 1571. And whether the machine for making the nail referred to in the answer was put out.

*Ans.* I think not.

*Int.* 1572. State whether the eight or ten patents referred to by you in answer to question 1174 were transferred to the United Company or any affiliated companies.

*Ans.* No, sir.

*Int.* 1573. I note you say in the answer: "We have obtained eight patents from them." Kindly explain what you mean by that statement.

*Ans.* That statement was erroneous and should be corrected. Of course, we did not obtain any patent from the Goddu Sons Metal Fastenings Company; that is, no patents were assigned to the United Company by the Goddu Sons Metal Fastening Company.

*Int.* 1574. The United Company did, however, as I recollect your testimony, acquire the stock of the Goddu Metallic Fastening Company?

*Ans.* Some of the stock.

*Int.* 1575. I note in answer to question 1173 you say, in referring to the patent: "There were some that I have not read that were not embodied in their machines." As you do not appear to have made reference to those particular patents, will you kindly give the date, title and number of such patent?

*Ans.* Two patents of the Goddu Sons Company I did not men-

tion were No. 583,047, May 25, 1897, W. Goddu, nailing machine, and 583,048, May 25, 1897, W. Goddu, nailing machine.

*Int.* 1576. Kindly state whether machines were made by the United Company or any affiliated company in accordance with the nailing machine patents referred to in your last answer.

*Ans.* Not so far as I know.

*Int.* 1577. In your answer to cross-question 1175, replying to the inquiry as to what patents were obtained from the Goddus themselves, you say: "There were ten patents altogether, of which I will note those first that were infringed by the machines of the Goddu Sons Metal Fastenings Company." Following this statement, you give the numbers and dates of certain patents. Kindly state whether you personally examined the machines of the Goddu Sons Metal Fastenings Company and compared the same with the patents enumerated by you.

*Ans.* In July, 1898, I spent about a week in examining the machines of the Goddu Sons Metal Fastenings Company. At the time I was examining these machines, or immediately after, I had drawings made illustrating the constructions of the respective machines, which drawings are still in my possession. With the aid of those drawings and notes made at the time, I am able to determine the exact construction of those machines. I have examined the patents mentioned by me in answer to question 1175 in drawings and notes to which I have referred, and my statement as to infringement of those patents named by me was based upon that examination. I should like to state that patent No. 614,460, which, as stated by me in that answer, was infringed by the Goddu Sons' loose nailer and the Goddu Sons' slugger, was also infringed by the Goddu Sons' string nailer.

*Int.* 1578. You say in answer to cross-interrogatory 1180, as I understand you, that there was litigation between the McKay Shoe Machinery Company and the Goddus, father and sons, and the Goddu Sons Metal Fastenings Company before the United Company came into existence. Kindly state what you mean by that statement. That is, were cases pending in court? If so, what cases? Were the cases for infringement, or on contract?

*Ans.* Before the formation of the United Company a suit had been brought against the Goddus, father and sons, and the Goddu Sons Metal Fastenings Company, in the name of the trustees of the McKay Metallic Fastening Association, James W. Brooks, principal trustee, and Frank L. Stanley, associate trustee, under the contract which Louis Goddu, the father of the sons, had entered into previously with the trustees of the Metallic Association. It was charged by the trustees of the Metallic Association that the inventions embodied in the machines of the Goddu Sons Company had been made by Louis Goddu, the father,—

*Int.* 1579. Pardon me. I do not care for all the details, but if you will tell me where the suit was pending?

*Ans.* —and this suit was brought to compel the transfer of these inventions to the Metallic Association. Prior to the formation of the United Company no infringement suits had been actually instituted, but bills of complaint and affidavits had been prepared and printed in support of motions for preliminary injunction.

*Int.* 1580. Kindly state in what court the action referred to by you, to compel transfer of inventions of patent, was brought.

*Ans.* I think it was in the Circuit Court, but I will verify that, if you desire.

*Int.* 1581. Kindly do so, and give the number of the case and the date when the bill was filed, if convenient. In your answer to cross-question 1175 you say the tacking machine of the Goddu Metal Fastenings Company was covered by patent 584,735, of June 15, 1897, and I understand you to say that you examined the tacking machine referred to. Kindly state whether the tacking machine was in operation or set up for operation at the time you examined it, and for how long a time, if you know, it had been in operation.

*Ans.* I examined this machine in the small machine shop adjacent to the residence of Louis Goddu, the father, in Winchester. The machine was in such condition that it could be turned over by hand or by power if desired.

*Int.* 1582. And had this type of machine been manufactured by

the Goddu Sons Metallic Fastenings Company prior to the time you examined it, as referred to by you in your last answer?

*Ans.* The particular machine which I examined at Winchester had, I understood, been constructed in that machine shop where I saw it.

*Int.* 1583. Then is it true that so far as you know the Goddu Company had not manufactured and put out the tacking machine of the type examined by you?

*Ans.* They had not put out any tacking machines.

*Int.* 1584. Then is not your statement in error that the tacking machine of the Goddu Metal Fastenings Company infringed the patent referred to by you, in view of the fact that no machines had been made or put out?

*Ans.* The machine which I saw, if made after June 15, 1897, the date of the patent No. 584,735, which date was more than a year before I saw the machine, constituted an infringement of that patent by the act of manufacture. However, it is of course a fact that the machine could not after June 15, 1897, be either made or used without infringing that patent.

*Int.* 1585. I understood you to say that patent 584,735 on the tacking machine was procured by the United Company from the individuals. I also understood you to say that the tacking machine you examined was made by the individuals from whom the United Company procured the patents. Kindly state if I am correct in my understanding.

*Ans.* I do not now recall that I stated by whom the machine of patent No. 584,735 which I saw had been constructed.

*Int.* 1586. Kindly state whether the tacking machine made under patent 584,735 was manufactured and put out by the United Company or any of its affiliated companies after the patent on that machine was acquired.

*Ans.* No, sir; it was not.

**MR. CHOATE.** I am not a bit clear about that patent 584,735. It is not mentioned in your cross-examination.

**The WITNESS.** The first line at the top of page 716.

Mr. CHOATE. When you say "the tacking machine of the company" do you mean of the Goddu Company?

The WITNESS. Yes. That company had been named in the preceding line.

*Int.* 1587. Kindly state if you know whether the loose nailing referred to by you on page 716, in answer to question 1175, was made and put out by the Goddu Company.

*Ans.* Certainly one machine had been made, — the one which I examined, — but no machines were ever put out by the Goddu Sons Company.

*Int.* 1588. Kindly state whether the loose nailing examined by you, referred to in your last answer, was operative.

*Ans.* The machine could be turned over. I assume that answers your question.

*Int.* 1589. Do you mean you did not see it in operation?

*Ans.* I did not see it operating upon shoes. I don't know that it was ever used in the actual manufacture of a shoe.

*Int.* 1590. Kindly state whether the United Company, after acquiring the patent covering the loose nailing referred to, manufactured and put out loose nailers of that type.

*Ans.* I believe you have already inquired as to that, but I will state again that, so far as I know, it did not.

*Int.* 1591. Kindly state whether the slugger referred to by you in answer to question 1175 was manufactured and put out by the Goddu Company.

*Ans.* It was never put out by the Goddu Company.

*Int.* 1592. Was it ever put out by anyone, so far as you know?

*Ans.* No, sir.

*Int.* 1593. Will you kindly state whether the string nail wire referred to by you in answer to question 1175, which you say was broadly covered by patent 641,099, was made and put out by the Goddu Company or by any other company?

*Ans.* Not so far as I know.

*Int.* 1594. Kindly state whether the screw-threaded wire referred to by you in the same answer was manufactured and put out by the Goddu Company or by any other party.

*Ans.* The Goddu Sons' screw machine was tried in one shoe factory, and I understand that this wire was supplied for use on that machine, but I don't understand that it was sold, as this use to which I refer was purely experimental.

*Int.* 1595. Did the United ever put out the fastening material referred to by you in your last answer?

*Ans.* That fastening material was very similar to the old standard screw wire formerly put out by predecessors of the United Company, and possibly to a very limited extent by the United Company after March, 1899.

*Int.* 1596. Will you kindly explain just what you mean in your last answer in making reference to "the old standard screw wire"? That is, whether a machine known as the old standard screw machine was manufactured and put out by the United Company, or any of its predecessors, in which such wire was used?

*Ans.* The old standard screw machine was the machine which —

Mr. CHOATE. Mr. Howard, the question is as to wire and not as to the machine.

The WITNESS. The latter part of the question is as to the machine.

[*At the request of Mr. Choate the question was repeated by the stenographer.*]

Mr. CHOATE. I object to that question as leading, and not opened by anything on cross-examination.

Mr. WEBSTER. And you instruct the witness not to answer?

Mr. CHOATE. No. But why don't you really just ask for an explanation as to what "old standard screw wire" means?

Mr. WEBSTER. He knows what we want. It is desirable to make the record as short as possible, and it seems to me he might explain it and do away with the necessity of a vast number of questions.

Mr. CHOATE. Why don't you just ask him what he means by standard screw wire?

*Int.* 1597. In view of the suggestion of opposing counsel, I will not at the present time insist on an answer to the question, but will ask you to explain what you mean by standard screw wire.

*Ans.* The old standard screw wire to which I referred was a wire having a single thread.

*Int.* 1598. Will you now state when the old standard screw wire having a single thread first went into use, so far as you know, and in what machine it was employed?

*Mr. CHOATE.* I desire to note my objection to the question as immaterial and not opened by anything on cross-examination, the standard screw wire having simply been used as an illustration by the witness. I instruct the witness not to answer the question until directed to do so by the court.

*The WITNESS.* Under advice of counsel, I decline to answer that question.

*Int.* 1599. Are you willing to state when the material termed by you "old standard screw wire" first went into use?

*Ans.* I cannot give the exact date, but it was certainly more than twenty years ago.

*Int.* 1600. Are you willing to state whether the United Company or any of its predecessors made and put out a machine adapted to use the wire termed by you "old standard screw wire"?

*Ans.* The predecessors of the United Company put out such a machine.

*Int.* 1601. Are you willing to give the commercial name of the machine referred to in your last answer?

*Ans.* For many years it has been known as the "old standard screw machine".

*Int.* 1602. Are you willing to state what company made and put out the machine termed by you as the "old standard screw machine"?

*Ans.* The McKay Metallic Fastening Association put that machine out.

*Int.* 1603. Are you willing to state when, so far as you are able to state, the "old standard screw machine" was first put out approximately?

*Ans.* I cannot state it from memory.

*Int.* 1604. Kindly state whether the United Company ever put

out a machine adapted to accomplish the same result as the machine referred to by you as the "old standard screw machine".

*Ans.* The United Company has put out a machine for attaching the outer sole of a shoe by means of a screw of threaded wire.

*Int.* 1605. By the last answer do you wish to be understood as saying that the machine put out by the United Company is adapted to accomplishing the same result as the machine referred to by you as the old standard screw machine?

*Ans.* I should prefer to accompany my answer to that question by a somewhat detailed explanation of the essential differences between the machine of the Goddu Sons Company and the machine of the United Company. It seems to me that my previous answer is sufficient.

*Int.* 1606. In your answer to question 1175 you say "there were a number of other patents". I do not recollect that you have specified what these "other patents" were. Will you kindly give the number, date and title?

*Ans.* The patents not mentioned by me in my answer to question 1175, which were assigned by the individuals to the United Company, were : No. 569,152, October 6, 1896, W. Goddu, tacker; No. 572,538, December 8, 1896, N. and G. Goddu, sewing machine; No. 592,702, October 26, 1897, N. and G. Goddu, sewing machine for lasting boots or shoes; No. 595,878, December 21, 1897, W. Goddu, nailing machine. There were also assigned applications, serial No. 597,027, filed June 26, 1896, which matured into patent 745,819, December 1, 1903, W. Goddu, sewing machine; application serial No. 689,656, filed October 27, 1898, which matured into patent No. 950,693, March 1, 1910, G. Goddu, pegger.

*Int.* 1607. Will you now kindly state briefly whether any machines or devices made in accordance with the construction set forth in the patents referred to by you in your last answer were ever made or put out by any person, firm or corporation?

*Ans.* In the cases of some of these patents some steps were taken before March, 1899, toward the construction of machines, but most, if not all, of the machines were never completed. As to No. 950,693, March 1, 1910, the United Company constructed sev-

eral experimental pegging machines in which some of the inventions claimed in the application for that patent at the time of its acquisition were embodied.

*Int.* 1608. Kindly state whether the United Company are now putting out or ever have put out a machine known commercially as the Chase laster.

*Mr. CHOATE.* That is not opened on the cross-examination, *Mr. Howard*. I think I will interpose an objection and ask the witness not to answer.

*Ans.* Under advice of counsel, I decline to answer.

*Mr. WEBSTER.* The question is merely preliminary. It seems to counsel for the Government fair that the witness should answer. Counsel reserves the right to pray the judgment of the court.

*Int.* 1609. Referring again to the matter of the litigation to which you have made reference as between the Goddu Company and the McKay Company, you have referred to one suit. Kindly state if that is all the litigation, so far as you know, between the companies referred to and to which you made reference in cross-examination.

*Ans.* But one suit had actually been instituted, although, by my answers to questions 1180 and 1181, I doubtless had in mind proposed infringement suits which were about to be instituted, but which had not actually been begun before March 24, 1899.

*Int.* 1610. State, if you know, what patents were relied upon as foundation for the proposed litigation for alleged infringement in the proposed suits referred to by you.

*Ans.* These patents were as follows: No. 265,227, September 26, 1882, Goddu, machine for driving sole fasteners; No. 403,835, May 21, 1899, Goddu, machine for uniting soles to uppers; No. 289,103, November 27, 1883, Hopkins, nailing machine; No. 356,-107, January 18, 1887, Dunham, boot or shoe nailing machine; No. 383,455, May 29, 1888, Goddu, nailing machine; No. 385,802, July 10, 1888, boot and shoe nailing machine; No. 493,910, March 21, 1893, Cummings and Coupal, pegging machine; No. 563,-478, July 7, 1896, nailing machine; No. 490,625, January 24, 1893, nailing machine.

*Int.* 1611. Am I to understand you to say that bills of complaint for infringement of all the patents narrated by you in the last answer were prepared?

*Ans.* Yes, sir.

*Int.* 1612. Will you kindly state who was the complainant or complainants and defendant or defendants in these several proposed causes?

*Ans.* James W. Brooks, principal trustee, and Frank S. Stanley, associate trustee, of the McKay Metallic Fastening Association, were, I believe, the complainants in each of the proposed suits, and the Goddu Sons Metal Fastenings Company was the defendant. I am not certain now whether any individuals were joined as defendants.

*Int.* 1613. Is there any of that data called for that you could get right away if we had a recess?

*Ans.* I have it here. In five minutes I could probably get it so as to give it to you. I have some of it here. What I have I could probably give you.

*Int.* 1614. Give us what you can at the present time, and then if it requires a little time we may take a little longer recess so as to give you time to look it up.

*Ans.* You inquired at a previous session whether any Globe lock-stitch welters had been put out by the United Company. So far as I can ascertain, none were put out by the United Company. You asked me to produce an illustration of the twin sole-laying machine, and I now produce it. The name on this cut is "Goodyear Improved Sole Laying Machine". This machine is a development of the two-form sole-laying machine previously known as the "Good-year Improved Twin Sole Laying Machine".

The EXAMINER. That will be marked "Plaintiff's Exhibit No. 200".

The WITNESS. There is still some information that I have not here but can give you later.

Mr. WEBSTER. Now, Mr. Choate, I cannot finish until he gives me the bulk of the data and information called for, which he kindly agreed he would furnish; and do you want to go ahead, allowing

me to stop now and you go ahead and then I take up the other matters later?

Mr. CHOATE. Now, what are the things he has not given?

Mr. WEBSTER. I don't know. I may have inadvertently forgotten something. I want to save all the rights I am entitled to.

Mr. CHOATE. Does that complete all the things you have thought that he asked for?

The WITNESS. No. He wished me to obtain cuts showing the successive stages in the development of the Amazeen skiving machine and to give information about the patents on that machine in its successive stages.

Mr. CHOATE. Is that important?

Mr. WEBSTER. No. I do not consider it of large importance. I cannot tell until after I see it. The probability is that I would not take but a few minutes.

Mr. CHOATE. If you really wanted to have that followed up, I should think it would take some time to look it up.

The WITNESS. I think I have that in my office in fair shape.

Mr. CHOATE. You can have that this afternoon?

The WITNESS. Yes.

Mr. CHOATE. What else?

The WITNESS. Mr. Webster asked me to furnish a list of the patents and applications on inventions embodied in the —

Mr. WEBSTER. There is one patent I referred to yesterday which I intended to introduce. I do not think I introduced it. I cannot tell what particular one it was until I look at the record. Is there any objection to my putting it in later?

Mr. CHOATE. I would like to wait and see what it is before I decide. I will not object to your presenting it later.

The WITNESS. In the power heel-breasting machine shown on page 176 of the 1902 catalogue to which I referred yesterday in connection with the discussion of the Brewer patent.

Mr. CHOATE. Have you got those now?

The WITNESS. No. I asked for those about five o'clock last evening and requested that they be furnished me by 9.30 today, but I did not get them. They are probably ready now.

Mr. CHOATE. That is two things. Now, what else?

The WITNESS. The dates when the Ross-Moyer machines were introduced I cannot have before the first of next week, as that information must come from Cincinnati. This morning I was asked for the data of the suit brought by the trustees of the McKay Metallic Fastening Association against the Goddus.

Mr. CHOATE. Are there any inventions asked for?

The WITNESS. I was not asked that. That is in connection with the proposed patent infringement suit, wasn't it?

Mr. CHOATE. Does that cover everything?

The WITNESS. That covers everything except cuts of some machines which I referred to in connection with the discussion of the Freeman patents.

Mr. CHOATE. Then, outside of the subjects Mr. Howard has just enumerated, you have completed your re-examination?

Mr. WEBSTER. Unless I think of something else that I inadvertently omitted. I think now of one matter that I should like to touch upon briefly.

*Int.* 1615. You have testified in cross-examination with reference to litigation concerning the eyelet patents. My recollection is that you have not specified what suits were brought, upon what patents they were brought or who the complainants and defendants were. If you have this data, will you kindly spread it on the record at the present time?

*Ans.* I have now at hand data as to the following suits: Equity No. 1013, Enamel Eyelet Company of Maine *v.* John C. Rhodes, bill filed August 1, 1898, for infringement of design patent 24,867, November 12, 1895, Kempshall; Equity No. 1085, John C. Rhodes, et al. *v.* Lucius Beebe & Sons Company, bill filed November 5, 1900, for infringement of patent 565,091, August 4, 1896, Rhodes. This suit was against a user of the enamel eyelet put out by the Enamel Eyelet Company; Equity No. 1543, new series, J. C. Rhodes & Company, Inc. *v.* Morley Button Manufacturing Company, bill filed October 29, 1901, for infringement of patent 565,-091, August 4, 1896, Rhodes. Equity No. 1544, new series, J. C. Rhodes & Company, Inc. *v.* Morley Button Manufacturing Com-

pany, bill filed October 30, 1901, for infringement of design, patent 24,867, November 12, 1895, Kempshall. Those are all the suits that I have notes of before me.

*Int.* 1616. State, if you know, how the cases were disposed of.

*Ans.* The suits Equity No. 1013 and 1285 had not been prosecuted to a final hearing before the acquisitions of the Enamel Eyelet Company and J. C. Rhodes & Company. After these acquisitions, the suits were settled amicably.

*Int.* 1617. Do you know what the entry was?

*Ans.* In the former, the entry was: "Bill dismissed by consent." In the latter the entry was: "Bill dismissed", according to my notes. In Equity No. 1543 and Equity No. 1544, the suit brought by the Rhodes Company against the Morley Company, both bills were dismissed without prejudice and without costs in accordance with the agreement to that effect contained in the instrument dated December 4, 1901, to which the United Shoe Machinery Company and the Morley Company were parties, that agreement being the one which was made at the time of the acquisition of the Morley Company's eyelet patents by the United Shoe Machinery Company.

Mr. CHOATE. In other words, all this litigation continued until matters were finally composed by the acquisition of the companies?

The WITNESS. Yes; and settlement of the litigation between the Rhodes Company and the Morley Company was set forth in the agreement as one of the objects of the transaction.

Mr. WEBSTER. Would you rather we adjourned until two o'clock and let me see what else I want to put in, or let me pick up the tag ends afterwards?

Mr. CHOATE. I should like to use up the time, if agreeable, in recross and then let you complete anything you have at two o'clock.

Mr. WEBSTER. That is quite agreeable to me.

Mr. CHOATE. I mean if it is agreeable to everybody, as long as we have given up this time, to let us use it to the best advantage and get through.

Mr. WEBSTER. I am quite content. Of course, as I have said before, if I have omitted anything I want to save the right to put it in.

*Cross Examination by CHARLES F. CHOATE, Jr., Esq., of Counsel for Defendants.*

*Cross-Int.* 1618. The suit brought by Brooks and Stanley, trustees, against the Goddu Sons Company had been running for some little time before the stock of the Goddu Company was bought by the United Company, had it not?

*Ans.* Yes, sir.

*Cross-Int.* 1619. A good deal of testimony had been taken?

*Ans.* A very large amount.

*Cross-Int.* 1620. And the claims of the McKay Metallic Fastening Association developed and substantiated before the stock was purchased by the United Company?

*Ans.* Yes.

*Cross-Int.* 1621. As you have been asked about the subject of litigation and the character of the charges, I will ask you if you will kindly produce and attach to your deposition a copy of the bill filed in Brooks and others against Goodu Sons?

*Ans.* I will do so.

*Cross-Int.* 1622. You referred to a bill or bills of complaint which had been prepared, supported by affidavits, based upon the alleged infringement of the McKay Metallic Fastening Association by the Goddus, or by the Goddu Sons Company, and you have been asked also about the character of those complaints. I will ask you if you will produce a copy of that bill or bills, with the affidavit of James W. Brooks in support of it, and attach it to your deposition?

*Ans.* I shall be glad to. I will add, however, that there were other affidavits.

*Cross-Int.* 1623. I understand that the other affidavits related particularly to technical matters.

*Ans.* Yes.

*Cross-Int.* 1624. In brief, the substance of the quarrel between the Metallic Fastening Association and the Goddus was this, was it not: that Louis Goddu had been employed by the Metallic Fastening Association a good many years and had invented more

or less machinery; they made contracts with him, and from time to time they claimed he had broken them and they had been forced to make new ones; they could not get him to abide by his agreements with them; they had taken his sons into their employ, had gone to Winchester and built a factory at his desire, and then some difference had arisen as to who should be superintendent of that factory, and one by one the Goddu Sons had left the employment of the Metallic Fastening Association; Louis Goddu had opened a little shop in which his sons were working; patents were being taken out ostensibly in the names of the sons which the trustees of the Metallic Fastening Association charged were really the inventions of Louis Goddu, which were being taken out in the names of his sons to conceal their real origin, and a suit was brought to compel a transfer of those patents taken out in the names of the sons to the company as being inventions really made by Louis Goddu? In substance, that is the statement of the quarrel, isn't it?

Mr. WEBSTER. Question objected to as entirely improper, more in the nature of argument than inquiry.

Mr. CHOATE. Well, if you object to that statement of it I will withdraw it. I will not press it. I thought it a convenient summary of the situation.

The EXAMINER. Does it all go out?

Mr. WEBSTER. I think I ought to object to it. I do not believe it is fair to argue the case on the record that way.

Mr. CHOATE. Well, if you really object, I will withdraw it. I think you will find on examination of the papers it is a fair summary of what they charge.

The EXAMINER. Do you desire it stricken from the record? If Mr. Webster consents, strike it from the record.

Mr. WEBSTER. Let it stay as it is, and the record shows it is withdrawn.

*Cross-Int.* 1625. Mr. Howard, I take it that your catalogue referred to as the catalogue of 1902 is not necessarily a complete description of all machines of the United Company, is it?

*Ans.* At that time or now?

*Cross-Int.* 1626. Well, either then — of course not now.

*Ans.* That is true.

*Cross-Int.* 1627. From time to time as machines were developed, single sheet illustrations of them were prepared if desired for the trade?

*Ans.* That is so.

*Cross-Int.* 1628. The fact that a machine does not appear in the catalogue is not necessarily conclusive that it was not being offered to the trade by the United Company at that time?

*Ans.* That is correct.

*Cross-Int.* 1629. With reference to the Atlas leveler, of which you produced a cut this morning, Exhibit 199, had that been developed at the time of the compilation of the catalogue of 1902?

*Ans.* No, sir.

*Cross-Int.* 1630. The cut which you offered as Exhibit 199 was then prepared for distribution, I take it, some time afterwards?

*Ans.* Yes, sir.

*Cross-Int.* 1631. Did the United Company, embodying the ideas obtained from Winkley and Phillips in the Atlas leveling machine, manufacture and offer the machine to the trade?

*Ans.* Yes, sir.

*Cross-Int.* 1632. And was it put out to a large extent?

*Ans.* Yes, sir; about five hundred of them were put out.

*Cross-Int.* 1633. And which accommodation to the trade has continued, has it not, ever since?

*Ans.* Yes, sir; continuously.

*Cross-Int.* 1634. And they are still in use and still offered to the trade?

*Ans.* Yes; and still being put out.

*Cross-Int.* 1635. With reference to the Breach machine, was every assistance afforded by the United Company to Breach in an endeavor to make commercial the idea embodied in his alleged invention?

*Ans.* Every possible assistance.

*Cross-Int.* 1636. And work was continued on it for quite a long time?

*Ans.* Nearly or quite two years, as I remember it.

*Cross-Int.* 1637. A good deal of money spent on it?

*Ans.* A large amount.

*Cross-Int.* 1638. And the result was that a machine could not be produced which was acceptable to the shoe manufacturers?

*Ans.* That was the result.

*Cross-Int.* 1639. They could not be interested in it?

*Ans.* No, sir.

*Cross-Int.* 1640. And that was the occasion for cessation of efforts in putting out or attempting to put out any Breach machine?

*Ans.* That, accompanied by a development in trade conditions in which you may not be interested.

*Cross-Int.* 1641. You may briefly mention it.

*Ans.* Shortly before the time of the acquisition of the Breach patents, sole-rounding machines of the so-called Stanley and Julian type were introduced, which used a wooden pattern instead of a metal pattern such as had been previously used in sole-rounding machines, and as was used in the Breach machine. That pattern cost but a small fraction of the cost of the metal pattern, and was a very great improvement because it obviated the necessity of lubricating the edge of the pattern, which had always presented a serious difficulty.

*Cross-Int.* 1642. The Bay State International Shoe Machinery Company manufactured its machines, if any, where?

*Ans.* In Montreal, Canada.

*Cross-Int.* 1643. None in this country, so far as you know?

*Ans.* None whatever.

*Cross-Int.* 1644. What do you say with respect to the comparative merits of those machines as compared with those for performing the same or similar operations upon which the United Company was then at work? Did they develop as excellent qualities?

*Ans.* These machines were distinctly inferior to machines being put out by the United Company at that time. I am prepared, if desired, to explain in detail the inferiority and defects of the machines of the Bay State International Company.

*Cross-Int.* 1645. I won't ask you to go into detail, but these

machines were ones which you stated were patented in Great Britain and in France?

*Ans.* Yes, sir.

*Cross-Int.* 1646. The machines of the United Company, to which you say they were inferior, were patented in the United States, were they?

*Ans.* Yes, sir; and also abroad, of course.

*Cross-Int.* 1647. But the Bay State Company did not have United States patents?

*Ans.* No, sir; the Bay State International Shoe Machinery Company owned no United States patents.

*Cross-Int.* 1648. Their Canadian or British patents required them, if they desired to retain the patents, to manufacture in those countries?

*Ans.* The Canadian patent law required manufacturing in Canada, and the French patent law in France. At that time the manufacture was not required under British patents.

*Cross-Int.* 1649. It was later, was it not?

*Ans.* Yes.

*Cross-Int.* 1650. Calling your attention to the fact that among the matters involved in the transaction with the Seaver Process Lasting Company were certain inventions on pulling-over machines, have the inventions acquired from the Seaver Process Lasting Company been embodied in pulling-over machines which have been perfected and put out by the United Shoe Machinery Company or the ideas embodied in the inventions?

*Ans.* Yes, sir; and the mechanism embodying those features is of the utmost importance in that machine.

*Cross-Int.* 1651. The Seaver Company did not have any commercial machine at the time of the transaction, did it?

*Ans.* They had only an experimental machine.

*Cross-Int.* 1652. And there was not any commercial machine in the market at that time?

*Ans.* No, sir.

*Cross-Int.* 1653. And it was a combination of the ideas involved in the Seaver patents with those upon which your own people were

working that resulted in the present commercial pulling-over machine?

*Ans.* Yes, sir.

*Cross-Int.* 1654. Were the lasting inventions obtained from the Seaver Company as useful and as beneficial as it was hoped and expected that they would be at the time of the purchase? Did they develop so?

*Ans.* No, sir; there was no demand from shoe manufacturers after the purchase of the Seaver patents for the Seaver lasting machine.

*Cross-Int.* 1655. Was it found practicable to adopt or incorporate any of the features of the Seaver machine in machines which were desired by shoe manufacturers?

*Ans.* It was not, as the corresponding features in the United Company's machines were in each instance superior.

Mr. WEBSTER. Answer objected to as an expression of opinion rather than a statement of facts.

*Cross-Int.* 1656. You have been asked if in certain cases machines as described in a particular patent have been put out by the United Company. I will ask you whether it has not usually been the case that where patents have been acquired and the character of those patents has been studied and worked over, ideas or parts of ideas or suggestions have been developed from them which, if practicable, have been embodied in machines which have been put out by the United Company?

Mr. WEBSTER. Objected to as calling for an opinion, having reference to no particular matter referred to in the redirect examination.

*Ans.* That has been true in nearly every case.

*Cross-Int.* 1657. And is it not true that in all the cases so far as you have knowledge, and of which you have been asked in redirect examination, an effort has been made in good faith to do something with the ideas or patents acquired, and so far as they have developed novel or useful features, those have been put to practical use?

Mr. WEBSTER. The same objection, that it calls for an opinion,

having reference to no particular matter referred to in the redirect examination.

*Ans.* That is true.

*Cross-Int.* 1658. And where they have been in whole or in part rejected or not used, it has been because study and experiment has developed the fact that they were not practicable or were inferior to those machines which the art had already developed?

**Mr. WEBSTER.** The same objection, that it calls for an opinion, having reference to no particular matter referred to in the direct examination.

*Ans.* That has been true in every instance where the inventions acquired were not put into practical use.

**Mr. CHOATE.** That is all. Now, we have got fifteen minutes. If Mr. Howard could be excused he could get his material together and be ready at two o'clock to supply what Mr. Webster wants.

**Mr. WEBSTER.** You are through with your cross-examination?

**Mr. CHOATE.** Yes, except so far as you open up other subjects.

**The EXAMINER.** Then we will suspend until two o'clock.

*Cross-Int.* 1659. You now produce the bill of complaint in the patent case you spoke of?

*Ans.* I do.

**Mr. CHOATE.** I offer that as an exhibit.

**The EXAMINER.** "Defendants' Exhibit No. 101", bill of complaint and affidavit attached.

*Cross-Int.* 1660. I would like to ask you one more question with reference to Goddu machines: Mr. Webster asked you whether any of those machines were manufactured or put out by the United Company, and you made your answer that they were not. If there are any reasons why those machines have not been manufactured or put out, I wish you would state them.

*Ans.* There was a fundamental weakness in the loose nailing of patent No. 383,044, in that this machine had an edge feed. This rendered the machine entirely impracticable for nailing the heel seats of Goodyear shoes, which is the principal use to which a loose nailing machine is put. At the time the heel seat of a welt shoe is nailed the heel end of the blocked sole, which has previ-

ously been sewed around the shank and fore part, is not trimmed and presents corners, as in the sample which I exhibit. The impracticability of using an edge feed machine for this work is obvious upon inspection of this sample. It should further be noted that this machine was not equipped with a jack. The horn shown in Figure 5 of the patent is adapted only for McKay work. The machine would also be unfitted for shank reinforcing work on the welt shoe, because that operation is performed after the edge of the sole has been trimmed, and there would be liability of mutilating the edge of the sole by the edge feed. The slugging machine of patent 583,086 had the same defect as the loose nailer; that is, this machine had an edge feed instead of an awl feed. The impracticability of an edge-feed slugging machine will be obvious on inspection of a sample heel and top-lift, which I exhibit. It will be observed that the edge of the top-lift presents but little surface for engagement by the edge feeding device, and it is practically impossible to secure the proper spacing for the slugs, which are of course very prominent in the finished shoe. This slugging machine was further impracticable for commercial use because it was so constructed that the horn dropped too far to permit the work to be fed satisfactorily. This could not be remedied without infringing the patents of the United Company. The slugging machine also was not equipped with a jack, and accordingly was not adapted for slugging welt shoes. The standard screw machine of the Goddu Sons Metal Fastenings Company, patent No. 583,045, used a single threaded wire like the old standard screw machine. The speed of the machine was consequently limited to 125 to 140 nails a minute, while the rapid standard screw machine of the United Company, using a double-threaded wire, ran at a speed of from 225 to 240 nails a minute.

The EXAMINER. "Defendants' Exhibit 102" is blocked outsole such as used on welt shoes. "Defendants' Exhibit 103" is a slugged heel.

*Cross-Int.* 1661. There is a copy of the bill filed in the suit that was brought. I ask you to identify the copy of the bill in the suit

referred to in your redirect examination, and if that is a copy of it, I will put it in evidence.

*Ans.* This bill of complaint which you have handed to me is a copy of the bill of complaint filed February 2, 1898, in the Circuit Court of the United States, District of Massachusetts, No. 985, James W. Brooks et al. v. Goddu Sons Metal Fastenings Company et al.

The EXAMINER. "Defendants' Exhibit 104."

Mr. CHOATE. Nothing else, Mr. Webster.

*Direct Examination resumed by Mr. WEBSTER.*

*Int.* 1662. If you now have the data called for and not already put in, will you kindly produce the same?

*Ans.* You requested me yesterday to give the number, date and title of patents covering modifications adopted in the machine illustrated on page 176 of the United Company's catalogue of 1902, power heel-breasting machine, since 1902. These patents and applications are as follows: reissued patent No. 13,413, April 30, 1912, B. B. Waterman, heel-breasting machine; application of Warren Frazier, 458,603, filed December 7, 1909, renewed as No. 531-798, work support; patent No. 1,023,284, April 16, 1912, F. H. Warren, machines for use in the manufacture of boots and shoes; application serial No. 708,908, filed July 11, 1912, M. F. Brogan. A method of making knives for that machine is covered by application serial No. 712,316, filed July 30, 1912, E. L. Hurd, method of forming knives. You requested me to produce illustrations of the United Company's machines in which features of the machines of Edwin L. Freeman have been incorporated. I now produce an illustration of the United Company's loose nailing machine No. 2.

The EXAMINER. "Plaintiff's Exhibit 201."

[*Ans. continued:*] An illustration of the United Company's Ziz slugger, later named "slugging machine No. 5".

The EXAMINER. "Plaintiff's Exhibit 202."

[*Ans. continued:*] I also produce an illustration of the United Company's rapid standard screw machine. The machine incorpo-

ating the features of Freeman's machine is known as rapid "standard screw machine Model B", but I have not yet been able to procure an illustration of that machine. So far as the parts shown in the photograph are concerned, however, the Model B machine is substantially as shown in this illustration.

The EXAMINER. "Plaintiff's Exhibit 203."

[Ans. continued:] You requested me to produce illustrations of the successive models of the Amazeen skiving machine and to state the patents embodied in those models.

Mr. CHOATE. Is that quite the question?

The WITNESS. That is as I recall it. I should have looked that up. I overlooked it.

Mr. CHOATE. He asked you if there was any other machine previously in use known as the Amazeen skiver, and you said "Yes", and he asked how it differed from the Amazeen skiver shown in the catalogue, and that you were to look up.

The WITNESS. I find that Mr. Choate is correct. The machine shown on page 132 of the catalogue of 1902 is the machine then known as "new high speed Amazeen skiving machine". That was preceded by a machine now designated "Model No. 4", but formerly known as "new model" and by "Model No. 3", as it is now designated, formerly known as "old pattern", and illustrated on page 136 of the 1902 catalogue. There were also earlier models, No. 1 and No. 2, of which I do not have illustrations. I now produce illustrations of Model No. 4 and Model No. 3.

The EXAMINER. "Plaintiff's Exhibit 204" is an illustration of Model No. 4. "Plaintiff's Exhibit 205" is an illustration of Model No. 3.

[Ans. continued:] If you desire, I can, as previously requested by you, point out how the earlier models differed from that shown on page 132 of the 1902 catalogue, but this explanation would necessarily be somewhat detailed.

Int. 1663. I will not call for it at the present time.

Ans. The data which you requested me to produce this morning as to the suit against the Goddu Sons Metal Fastenings Company I have already furnished in introducing the exhibit bill of com-

plaint. That is all the information which I have ready at this time.

*Int.* 1664. I observe in bill of complaint, Defendants' Exhibit 101, James W. Brooks and others against Albert Van Wagenen and others, it is alleged that the respondents infringed patents Nos. 383,445, 385,802, 289,103 and 356,107 in the manufacture of a loose nailing machine. Kindly advise whether the United Company, to your knowledge, ever made a loose nailing machine constructed as set forth in the patents above referred to.

*Ans.* The United Company, or its predecessors in business, built and put out machines embodying the inventions of all these patents. I believe that inventions of all of these patents have been embodied in machines put out by the United Company.

*Int.* 1665. Kindly state, if you can, whether the loose nailing machines manufactured by the United Company immediately after its organization were constructed like the machines previously put out by the McKay Metallic Fastening Association.

*Ans.* Immediately after the organization of the United Company it continued to put out the same loose nailing machine which had been put out immediately before the organization of the United Company by the McKay Shoe Machinery Company, which had succeeded the McKay Metallic Fastening Association.

**Mr. WEBSTER.** Mr. Choate, are you willing to furnish the Government with a list of patents owned by the United Company or any of its associated companies, which patents expired prior to the filing of the petition in this case, and which patents relate to machines for cutting soles from sole leather, machines for lasting shoes, machines for attaching welts to uppers, machines for attaching welts to the outsoles, machines for leveling and laying soles and machines for rough rounding and channeling, thus saving the loss of time and, as it seems to us, unnecessary expense and annoyance involved in procuring this information in some other way?

**Mr. CHOATE.** It seems to us that it must be presumed that the United States has information to support the allegations made in its bill, and that that information should be supplied by the United States in the ordinary way.

Mr. WEBSTER. Then, as I understand, you decline to furnish the information called for?

Mr. CHOATE. I think I must decline to prepare and furnish the case for the United States.

Mr. WEBSTER. If any expense is involved in preparing the data called for, the Government would cheerfully pay the same. With that in view, have you any objection to furnishing the information?

Mr. CHOATE. That does not aid me, because to prepare its case for the United States would involve the labor of a good many of our men who have other important work to attend to. Now, have you finished with Mr. Howard on redirect?

Mr. WEBSTER. I want to see the record. My suggestion would be that we suspend until next Tuesday, and then I suppose in fifteen minutes we can finish with Mr. Howard on this matter and take up the other.

Mr. CHOATE. Well, what remains upon redirect?

Mr. WEBSTER. I took no memorandum as you were examining the witness. I supposed you would not finish your recross-examination for two days, and I, of course, relied upon the typewritten record. You finished it so quickly that I have no memorandum.

Mr. CHOATE. Well, that is all right.

The EXAMINER. Tuesday at 10 o'clock?

Mr. CHOATE. On Tuesday you will finish his redirect. Do you then want him on direct again at that time?

Mr. WEBSTER. I shall endeavor at that time to get him to tell us about some patents.

Mr. CHOATE. Can't you give him notice about the things you will want, so that he can prepare himself in advance?

Mr. WEBSTER. I will say this: I would like to show by Mr. Howard, unless we can agree upon it, what patents were owned by the United Company and its associate companies, which patents expired prior to the filing of the petition in this case, and which patents relate to machines for cutting soles from sole leather, to machines for lasting shoes, to machines for attaching welts to uppers of shoes, to machines for attaching outsoles to welts of shoes, to

sole-leveling machines, sole-laying machines, and rough-rounding and channeling machines, loose nailers and heelers.

Mr. CHOATE. And that will cover everything you want in the whole inquiry?

Mr. WEBSTER. I do not care at this time to go into any branch of the art other than those named.

Mr. CHOATE. Now, you will notice the allegation under which this evidence is being taken is that many of the patents on the principal machines owned or controlled by them were about to expire as of early in 1899. You do not want him to be prepared on the expiration of patents clear up to the filing of the bill, do you?

Mr. WEBSTER. I would like to run to approximately the time of the filing of the bill. It is a question as to what the term "were about to expire in the near future" means.

Mr. CHOATE [*to the witness*]. Can you be prepared on those points by next Tuesday?

The WITNESS. I would like to have the whole statement by Mr. Webster read to me before I answer that question.

[*Statement of Mr. Webster read by the stenographer as follows:*]

"I would like to show by Mr. Howard, unless we can agree upon it, what patents were owned by the United Company and its associate companies, which patents expired prior to the filing of the petition in this case, and which patents relate to machines for cutting soles from sole leather, to machines for lasting shoes, to machines for attaching welts to uppers of shoes, to machines for attaching outsoles to welts of shoes, to sole-leveling machines, sole-laying machines, and rough-rounding and channeling machines, loose nailers and heelers."

The WITNESS. Could you not narrow that a little? Because when you say "machines for attaching soles to welts" it is not clear whether you intend to include the auxiliary machines.

Mr. WEBSTER. I do not intend to include the auxiliary machines.

Mr. CHOATE. Then you want that information with reference to the welt-sewing machine and the sole-stitching machine, and you want it with reference to what lasting machine?

Mr. WEBSTER. As at present advised, I am more familiar with

the Chase lasting than any other. But I would like a memorandum with reference to other lasting machines if they have gone into use commercially.

Mr. CHOATE. The others which have been mentioned are the Consolidated hand method, — do you want that?

Mr. WEBSTER. As at present advised, I would like it, and I offer that suggestion because I am absolutely unfamiliar with it and do not know what the commercial term means.

Mr. CHOATE. McKay & Copeland, — do you want that?

Mr. WEBSTER. If it is convenient.

Mr. CHOATE. And the Ideal?

Mr. WEBSTER. Yes ; but I have to say that after examining these patents I probably will not go into any detail with reference to more than one or two machines of any class. That is, taking lasters, I do not think we will submit evidence later with reference to more than one lasting machine, or one type of lasting machine.

Mr. CHOATE. Which loose nailing do you want him to be prepared on?

Mr. WEBSTER. Any loose nailing that has gone into use.

Mr. CHOATE. The one that came from the McKay Company?

Mr. WEBSTER. I am content.

Mr. CHOATE. And that is now loose nailing No. 2 ; is that right?

The WITNESS. It was then called "the new loose nailing", but we now speak of it colloquially as the "old loose nailing".

Mr. CHOATE. What heeling machine? The McKay automatic?

Mr. WEBSTER. I am not sufficiently familiar, at the present time, with the machines to be able to identify them from their commercial names.

Mr. CHOATE. Well, now, can't you, Mr. Webster, make yourself familiar with those so that you won't have to cover a great field that you don't care anything about?

Mr. WEBSTER. I will try to.

Mr. CHOATE. Now, I am going to ask to have that list of machines read again.

[*Stenographer reads from statement by Mr. Webster as follows:*] "I would like to show by Mr. Howard unless we can agree upon it

what patents were owned by the United Company and its associate companies, which patents expired prior to the filing of the petition in this case, and which patents relate to machines for cutting soles from sole leather — ”

Mr. CHOATE. You will note that that is not included in the bill at all.

Mr. WEBSTER. I had an impression that it was.

Mr. CHOATE. Do you mean a clicking machine?

Mr. WEBSTER. No; I don't care anything about the clicking machine; I understand the clicking machine is a special machine for cutting uppers.

The WITNESS. Then that would be a dinker.

[*Stenographer continues reading the statement of Mr. Webster:*]

“— to machines for lasting shoes, to machines for attaching welts to uppers of shoes, to machines for attaching outsoles to welts of shoes, to sole-leveling machines, — ”

Mr. CHOATE. Now, let us stop there. Now, we have had the Star, the Acme, the Goodyear automatic, and the Atlas. Which one of those do you prefer?

Mr. WEBSTER. I would like all of them, if he has them classified in such a way as to produce the information readily.

Mr. CHOATE. All right.

[*Stenographer continues reading the statement of Mr. Webster:*]

“— sole-laying machines, — ”

Mr. CHOATE. That is the Goodyear improved sole layer.

[*Stenographer continues reading the statement of Mr. Webster:*]

“— rough rounding and channeling machines, — ”

Mr. CHOATE. There is only one of those.

[*Stenographer continues reading the statement of Mr. Webster:*]

“— loose nailers and heelers.”

Mr. CHOATE. Mr. Howard will try to be prepared on those, but without waiving our rights to object to the introduction of any of the evidence which may seem to us inadmissible. Now, Mr. Webster, you asked for patents reading on those machines which expired between 1899 and the date of the filing of the bill?

Mr. WEBSTER. I do not care if they expired before.

Mr. CHOATE. Do you mean before 1899? That is before we came into existence.

Mr. WEBSTER. You would not have that unless it was in the hands of your predecessors,—so, the patents expiring after the United Company came into existence.

Mr. CHOATE. And up to the filing of the bill?

Mr. WEBSTER. Patents relating to those machines, the class of machines noted.

Mr. CHOATE. That is, both in existence and expired?

Mr. WEBSTER. I don't just get what you mean.

Mr. CHOATE. Do you want both the patents that are existing now and those which have expired?

Mr. WEBSTER. I simply care for those which have expired. I don't care for those which were alive at the time of the filing of the bill.

The WITNESS. Now, just what do you mean by the expression "relating to", Mr. Webster?

Mr. WEBSTER. Well, I don't wish to limit the inquiry to patents relating only to machines which the United Company have recently put out, but if the United Company were putting out a machine in 1899, 1900, 1901, 1902, 1903, 1904, 1905 or 1906, upon which any of these patents read, then I desire to know what patents read on such machines.

The WITNESS. My difficulty was the vagueness that I thought I saw in the expression "relating to". I understand that your inquiry is limited to patents the inventions of which were at some time embodied in the commercial machine?

Mr. WEBSTER. Yes.

Mr. CHOATE. Do you want the patents themselves?

Mr. WEBSTER. I would not go so far as to ask for the producing of the patents. I ought to furnish those myself. I shall have to hunt them up. Of course it would be very nice to have them at the time of the inquiry, but there has recently been sent to me about half a ton of patents from the department which are now in

Springfield being classified, and I hope to find among them the patents which I need.

The EXAMINER. We will adjourn to Tuesday morning next, at 11 o'clock.

[*Hearing adjourned to Tuesday, July 22, 1913, at 11 o'clock A. M.*]

BOSTON, MASS., July 22, 1913.

Mr. CHOATE. Mr. Howard desires to correct one statement in his testimony.

Mr. WEBSTER. Very well.

The WITNESS. I desire to correct my answer to a question on page 1969 of the typewritten record [printed page 2049]. The question was: "Did the United Company put out any machines, after its purchase from the American Sole Laying Company, constructed like the machines which had previously been put out by the American Sole Laying Company?" I have learned since that session that the United Company put out fifty sole-laying machines substantially the same as the machines which had been put out by the American Sole Laying Machine Company prior to its acquisition by the United Company. The United Company continued putting out these machines so long as there was any demand for them from shoe manufacturers.

In response to a request from Mr. Webster that I produce drawings or cuts of machines in which features of the Freeman machine had been incorporated, I produced a photograph of the rapid standard screw machine, explaining that the Freeman features had been embodied in the rapid standard screw machine Model B, but that I did not at the time have a cut of that machine. I now have and produce a photograph of the Model B rapid standard screw machine in which the features of the Freeman machine to which I refer have been incorporated.

[*Print of Model B rapid standard screw machine introduced in evidence and marked "Plaintiff's Exhibit 206".*]

Mr. CHOATE. I would like to ask one further question, to explain one of his answers.

*Cross Examination resumed by Mr. CHOATE.*

*Cross-Int.* 1666. In your answer as to the Goddu loose nailing machine and the Goddu slugging machine, you used the terms "edge feed" and "awl feed". Please describe what you mean by those terms and describe the difference between the two kinds of feeds.

*Ans.* In the loose nailer or slugging machine having an edge feed, there is a device which engages the edge of the sole and which is given a motion in the direction in which it is desired that the work be fed to move the work along into position for the insertion of the next fastening. This mechanism comprises a tool having a serrated or roughened edge for engaging the stock. In an awl feed loose nailing or slugging machine, the machine is so organized that, after the awl has entered the stock to make the hole for the reception of the next fastening, the awl is moved toward and under the driver to bring the hole made by it into exact alignment with the driver, after which the awl is removed from the stock and the driver operates to insert the fastening.

*Cross-Int.* 1667. Was it a simple matter to substitute one of those feeds for the other?

*Ans.* It would not be a simple matter in any machine, and in the two Goddu machines in question, that is, the loose nailer and the slugger, such substitution would have involved entire reconstruction of the machines, and the machines so reconstructed would have been entirely different from the machines as actually built by the Goddu Company.

Mr. CHOATE. That is all, Mr. Webster.

*Direct Examination resumed by Mr. WEBSTER.*

*Int.* 1668. Referring to the Breach machine, I understand you to say, in response to questions by Mr. Choate, that a large amount of money was spent in the endeavor to make the idea embodied in Breach's alleged invention commercial. Kindly state if you have any personal knowledge as to the amount of money spent as stated by you.

*Ans.* I was in touch with the work as it was going on, and I think I may properly say that I have personal knowledge that the United Company expended approximately \$30,000 in this connection.

*Int.* 1669. Have you examined any data to enable you to testify as to the expenditure in question?

*Ans.* As to the amount which I have stated, I am relying upon information furnished by those who have access to the figures.

*Int.* 1670. Then, as to these facts you are testifying as to what some one else tells you; is that correct?

*Ans.* My testimony is based on my personal knowledge, as explained above, and upon information substantiating my personal knowledge, which I have received from others who have occasion to know the facts.

*Int.* 1671. In connection with the same matter, I understand you to say that shoe manufacturers could not be interested in the Breach sole-cutting machine. Kindly state just what you mean by that reply and your source of information.

*Ans.* I have personal knowledge that the machine was tried out in shoe factories. I was not directly informed by any shoe manufacturer that he did not wish to have the machine in his factory, but I was so advised by others who have direct dealings with shoe manufacturers.

*Int.* 1672. You refer in your recross-examination to the Bay State Company stitcher and welter, and I understand you to say that the Bay State Company did not have patents in the United States. Will you kindly state whether the stitchers and welters of the Bay State Company went into use abroad, if you know?

*Ans.* About ten sets of these machines were put out in England. By "set" I mean the combination of the two machines; that is, ten welters and ten stitchers.

*Int.* 1673. But whether any were put out in Canada you have no knowledge?

*Ans.* I have not at this time.

*Int.* 1674. In your recross-examination you refer to the Seaver lasting machine, and you said that there was no demand for that

machine after the purchase of the Seaver patents. Kindly state, if you know, whether the Seaver lasting machine was put out by the Seaver Company prior to the acquisition of the assets of the Seaver Company by the United Company.

*Ans.* Yes, sir; it was.

*Int.* 1675. Kindly say, if you know, for about how long a period the Seaver lasting machine was in use prior to the acquisition of the assets of that company by the United Company.

*Ans.* I cannot state from memory.

*Int.* 1676. State approximately if you can do so.

*Ans.* I could not state, without looking it up, that the machines were in use for as long a period as one year.

*Int.* 1677. You mean prior to the purchase?

*Ans.* Prior to the acquisition of the Seaver patents by the United Company.

Mr. WEBSTER. I do not think of anything further at the present time. Shall I go on with Mr. Howard?

Mr. CHOATE. Now, I understand you call him to examine him on direct on some other subject.

Mr. WEBSTER. Simply calling upon him for the list of patents as noted in the last hearing.

[Signature waived.]

Attest: CHARLES K. DARLING, *Special Examiner.*

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SECOND DEPOSITION OF NELSON W. HOWARD.

*Direct Examination by ALLEN WEBSTER, Esq., of Counsel for  
Complainant.*

*Int.* 1. Will you now produce the list of patents belonging to the United Shoe Machinery Company and its affiliated companies, which patents expired prior to the filing of the petition in this case, and which patents relate to machines for cutting soles from sole leather, machines for lasting shoes, machines for attaching welts to uppers, machines for attaching welts to outsoles, machines for leveling and laying soles, machines for rough rounding and

channeling soles, and metallic fastening machines and heelng machines?

*Ans.* As to the next to the last machine mentioned by you, your request was for patents on loose nailers, and I have here lists of patents on loose nailing machines, as well as lists of patents on the other machines mentioned by you.

*Int.* 2. Kindly produce the lists of such expired patents relating to machines for cutting soles from sole leather.

*Ans.* The United Shoe Machinery Company did not acquire from any of the companies which went into the United Company in February, 1899, any machines for cutting soles or any patents on such machines, and the United Company did not manufacture and put out any sole-cutting machines for several years after February, 1899.

*Int.* 3. Will you kindly produce the list of expired patents called for relating to machines for lasting shoes?

*Ans.* I now produce a list of patents on "lasting machine, Chase". A list of patents on lasting machine—

Mr. CHOATE. Let us have that marked as an exhibit.

*Int.* 4. Kindly read to the magistrate the number, title, date and name of inventor of each patent on the Chase lasting machine, which patents expired prior to the filing of the petition in this case.

Mr. CHOATE. I shall have to object to that question, Mr. Webster, as not within the scope of this order. I am perfectly willing you should use those lists which will serve a useful purpose to get this thing in a condensed form quickly. But your order does not entitle you to make any such inquiry. It is limited to proof of Letters Patent under which the defendants were manufacturing their machines in 1899, and proof that many of those patents were about to expire. Now, we shall be glad to convenience you if the United States will occasionally convenience us.

Mr. WEBSTER. At the last session, counsel for the United States inquired of counsel for the defendants whether Mr. Howard would produce a list of patents of the United Company and its associated companies relating to the various machines referred to, which patents had expired prior to the filing of the bill. It was the

understanding of counsel for the United States that counsel for the defendants agreed that Mr. Howard would produce such list. This, as it seems to us, is one step going to the support of the allegation referred to by learned counsel for the defendants.

Mr. CHOATE. Well, it seems to us that it is a great deal broader than the allegations of the bill. The bill suggests a certain situation: that in 1899 the patents which had existed were about to expire, and that that was the occasion for doing something, which something was a conspiracy and combination which the bill charges. It does not seem to us that that opens to you the opportunity for an inquiry as to what patents expired all the way from 1899 up to 1911.

Mr. WEBSTER. Are we to understand that counsel for the defendants instructs the witness not to answer the question?

Mr. CHOATE. I think I shall have to, Mr. Webster.

Mr. WEBSTER. And does the witness, acting under instruction, decline to answer?

The WITNESS. I do.

Mr. WEBSTER. In view of the attitude of counsel for the defendants and the witness, I desire to confer with my superior, and suggest a recess to enable me so to do, and desire to know of counsel for the defendants whether he will permit me to submit the lists in question to my superior to ascertain his views with reference to acceding to request of counsel for defendants, or as to what method counsel for the Government will pursue.

Mr. CHOATE. Counsel for the defendants has not made any request. I shall have to correct your statement in that respect. You may do anything which you would like to do. You may take one of these lists showing in substance what each of them show, for the purpose of conferring with your associates.

Mr. WEBSTER. It was the understanding of counsel for the United States that counsel for the defendants requested that if the lists went in, the lists should comprise not only the patents which had expired but also patents now alive. Hence the remark as to "acceding to request of counsel for defendants".

Mr. CHOATE. I don't think any such request was stated. I sug-

gested that it would be convenient if a list of patents on machines of any type was to be put in the record. It would be more intelligible if the complete list was put in, and put in in one place so that the court would not be required to search through various parts of the record to ascertain the patent protection of any particular machine; and to accomplish that desirable result I did not object to your going beyond the scope of the court's order. But I did suggest that if you went beyond the scope of the court's order that that would be a desirable result, and that if you did not think at the moment that you could confine yourself to that, it seemed to me that we better follow the court's order.

Mr. WEBSTER. The request was specific and related only to patents which expired prior to the filing of the petition. As at present advised, counsel for the United States does not care to introduce and does not call for a list of any patents other than those specifically referred to, to wit, those which had expired prior to the filing of the petition. And in view of the attitude of counsel for the defendants, counsel for the Government suggests that recess be had until counsel may have an opportunity to confer with his superior.

Mr. WEBSTER. I learn that Mr. Gregg is not in the city: that he cannot get here until Wednesday morning. I have telegraphed to Mr. Gregg and expect he will reach Boston early Wednesday. I therefore suggest a further postponement or recess until Wednesday at 10 o'clock in the forenoon.

[*Adjourned to 10 A. M., Wednesday, July 23, 1913.*]

BOSTON, MASS., July 23, 1913.

[*By direction of the Examiner and agreement of counsel the hearing was further suspended until 2 o'clock P.M.*]

*Int.* 5. Will you now read into the record a list of the number, date, title and name of applicant of patents called for in previous interrogatories, to wit, those which had expired prior to December 12, 1911, and after February 7, 1899.

*Ans.* Lasting machine, Chase: No. 329,366, October 27, 1885, Crisp, tacking machine: No. 337,925, March 16, 1886, Chase,

lasting machine for boots or shoes; No. 340,860, April 27, 1886, Chase, lasting machine; No. 364,088, May 31, 1887, Chase, machine for lasting boots or shoes; No. 376,368, January 10, 1888, Chase, lasting machine; No. 483,375, September 27, 1892, Chase, tack-driving mechanism.

Lasting machine, Consolidated hand method: No. 274,207, March 20, 1883, Matzeliger, lasting machine; No. 281,306, July 17, 1883, Scott, lasting machine for boots and shoes; No. 284,906, September 11, 1883, Scott, machine for lasting boots and shoes; No. 292,-575, January 29, 1884, Pearson, lasting machine; No. 415,726, November 26, 1889, Matzeliger, mechanism for distributing tacks, nails, etc.; No. 421,954, February 25, 1890, Matzeliger, nailing machine; No. 423,920, March 25, 1890, Gooding and Ladd, nail and tack driving machine; No. 423,921, March 25, 1890, Gooding and Ladd, pegging machine; No. 423,922, March 25, 1890, Gooding and Ladd, lasting machine; No. 423,937, March 25, 1890, Matzeliger, tack separating and distributing mechanism; No. 441,482, November 25, 1890, Gooding and Ladd, nail-driving machine; No. 459,-899, September 22, 1891, Matzeliger, lasting machine; No. 500,-141, June 27, 1893, Ladd, lasting machine; No. 510,972, December 19, 1893, Ladd, starting and stopping mechanism for lasting machines; No. 510,973, December 19, 1893, Ladd, lasting machine; No. 510,975, December 19, 1893, Ladd, lasting machine; No. 510,976, December 19, 1893, Ladd, tacking machine; No. 510,977, December 19, 1893, Ladd, lasting machine; No. 510,978, December 19, 1893, Ladd, tack separating and feeding mechanism; No. 523,939, July 31, 1894, Ladd, lasting machine.

Lasting machine, Ideal: No. 329,282, October 27, 1885, Copeland et al., lasting machine; No. 365,505, June 28, 1887, Copeland et al., lasting machine for boots or shoes; No. 422,734, March 4, 1890, Copeland et al., lasting machine; No. 446,631, February 17, 1891, Crisp et al., tack-driving machine; No. 455,174, June 30, 1891, Crisp et al., tack-driving machine; No. 465,073, December 15, 1891, Copeland et al., lasting machine; No. 500,225, June 27, 1893, Crisp et al., tack-driving machine; No. 500,319, June 27, 1893,

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Crisp, tack-driving machine : No. 521,954, June 26, 1894, Grandy, lasting machine.

Lasting machine, McKay and Copeland : No. 286,893, October 16, 1883, Brock, lasting machine ; No. 288,689, November 20, 1883, Brock, lasting machine ; No. 302,885, August 5, 1884, Brock, lasting machine ; No. 306,671, October 14, 1884, Brock, tack-driving implement ; No. 371,816, October 18, 1887, Brock, lasting machine.

*Lasting Machine No. 5, U. S. M. C.*; none of the patents covering inventions embodied in this machine expired prior to December 12, 1911.

Shoe machine, Goodyear welt and turn : No. 317,759, May 12, 1885, French, sole-sewing machine ; No. 412,704, October 8, 1889, French and Meyer, shoe-sewing machine ; No. 461,793, October 20, 1891, Briggs, method of forming chain stitches ; No. 488,505, December 20, 1892, LaChapelle, tension device for sewing machines ; No. 495,452, April 11, 1893, Cole, sewing machine ; No. 507,873, October 31, 1893, Arnold and Arnold, shoe-sewing machine ; No. 518,911, April 24, 1894, Briggs, take-up for shoe-sewing machines.

Sewing machine, Goodyear Universal inseam : No. 366,935, July 19, 1887, Dancel, sole-sewing machine ; No. 412,703, October 8, 1889, French and Meyer, sewing machine ; No. 488,505, December 20, 1892, LaChapelle, tension device for sewing machines ; No. 495,452, April 11, 1893, Cole, sewing machine.

Lockstitch machine, Goodyear outsole rapid : No. 366,935, July 19, 1887, Dancel, sole-sewing machine ; No. 412,703, October 8, 1889, French and Meyer, sewing machine ; No. 424,966, April 8, 1890, French and Meyer, shuttle for sewing machines ; No. 473,870, April 26, 1892, French and Meyer, sole-sewing machine ; No. 474,-774, May 10, 1892, French and Meyer, sole-sewing machine.

*Leveling Machine, Atlas*: none of the patents covering inventions embodied in this machine expired prior to December 12, 1911.

*Leveling Machine, Goodyear Automatic Sole*: none of the patents covering inventions embodied in this machine expired prior to December 12, 1911.

*Leveling Machine, Goodyear Welt and Turn (Turn Work):* none of the patents covering inventions embodied in this machine expired prior to December 12, 1911.

*Leveling Machine, Goodyear Welt and Turn (Welt Work):* none of the patents covering inventions embodied in this machine expired prior to December 12, 1911.

*Leveling Machine, Hercules:* none of the patents covering inventions embodied in this machine expired prior to December 12, 1911.

*Laying machine, Goodyear improved sole:* No. 304,416, September 2, 1884, Eppler, sole-laying machine; No. 315,923, April 14, 1885, Eppler, sole-laying Machine; No. 335,016, January 26, 1886, Coupal and Wood, sole-laying machine; No. 353,251, November 23, 1886, Coupal, sole-laying machine; No. 362,447, May 3, 1887, Holland, sole-laying machine; No. 375,549, December 27, 1887, Hamm, sole-laying machine; No. 376,406, January 10, 1888, Coy, sole-laying machine.

*Laying Machine, Goodyear Rotary Sole:* none of the patents covering inventions embodied in this machine expired prior to December 12, 1911.

*Rounding machine, Briggs, rough; rounding and channeling machine, Goodyear Universal:* No. 463,967, November 24, 1891, Briggs, rough rounding and channeling machine; No. 463,982, November 24, 1891, Briggs, rough rounding and channeling machine; No. 511,263, December 19, 1893, Briggs and Dance, rough rounding and channeling machine; No. 529,900, November 27, 1894, French and Meyer, channeling machine.

*Nailing machine, Hungarian; nailing machine, loose:* No. 265,227, September 26, 1882, Goddu, machine for driving sole fastenings; No. 356,107, January 16, 1887, Dunham, boot or shoe nailing machine; No. 383,455, May 29, 1888, Goddu, nailing machine; No. 490,624, January 24, 1893, Goddu, machine for uniting soles to uppers.

*Loading and attaching machine, McKay automatic heel:* No. 310,488, January 6, 1885, Allen, heel-nailing machine for boots or shoes; No. 317,851, May 12, 1885, Raymond, heel-nailing machine; No. 346,137, July 27, 1886, Towns et al., nail making

and distributing machine; No. 413,554, October 22, 1889, Raymond, nail machine; No. 446,383, February 10, 1891, Glidden et al., heelng machine; No. 502,667, August 1, 1893, Glidden, heel-compressing and loading machine.

*Nailing Machine, Alpha Wood Heel:* none of the patents covering inventions embodied in this machine expired prior to December 12, 1911.

Nailing machine, American lightning: No. 305,723, September 23, 1884, Tyler, heel-nailing machine; No. 321,401, June 30, 1885, Tyler and Merritt, heelng machine; No. 321,530, July 7, 1885, Raymond, heel-nailing machine; No. 343,703, June 15, 1886, Demary, heel-nailing machine; No. 446,885, February 24, 1891, Pope, heel-nailing machine.

Nailing machine, McKay rapid: No. 310,488, January 6, 1885, Allen, heel-nailing machine for boots or shoes; No. 446,383, February 10, 1891, Glidden and Elliott, heelng machine; No. 477,098, June 14, 1892, Brown and McCoy, heel-nailing machine.

That is all, Mr. Webster.

*Int. 6. Does the list of expired patents which you have read into the record include patents under which the Goodyear Shoe Machinery Company, the International Goodyear Shoe Machinery Company, Goodyear Shoe Machinery Company of Canada, Consolidated & McKay Lasting Machine Company, McKay Shoe Machinery Company, Eppler Welt Machine Company, International Eppler Welt Machine Company and Davey Pegging Machine Company operated under or owned at the time these companies were taken over by the United Shoe Machinery Company?*

*Ans.* The patents which I have named are those which expired prior to December 12, 1911, and the inventions of which were embodied in the machines named, which machines are those mentioned in the request for this information in response to which the lists are produced. The machines which I have named were being put out in February, 1899, by the Consolidated & McKay Lasting Machine Company, the Goodyear Shoe Machinery Company and the McKay Shoe Machinery Company, respectively, excepting lasting machine No. 5 U. S. M. C., leveling machine Atlas, leveling machine Good-

year welt and turn (turn work), leveling machine Goodyear welt and turn (welt work), leveling machine Hercules, laying machine Goodyear improved sole, nailing machine Hungarian and nailing machine Alpha wood heel, each of which machines were first put out by the United Shoe Machinery Company subsequently to February 7, 1899.

*Direct Examination by WILLIAM S. GREGG, Esq., of Counsel for Complainant.*

*Int. 7.* Does that list include all the patents owned or controlled by the Goodyear Shoe Machinery Company, for example, on weltting machines that expired prior to December 12, 1911, that were taken over by the United Shoe Machinery Company from the Goodyear Company at or about the time the United was formed?

*Ans.* The lists which I have read into the record comprise all patents covering inventions embodied in the machines of the Goodyear Shoe Machinery Company named by me and as to which information was specifically requested by Mr. Webster, in February, 1899, which expired prior to December 12, 1911.

*Int. 8.* What I intended to ask you there was, regardless of any request Mr. Webster made: Whether or not that list included all the patents, or whether that list is only in response to what he specifically requested?

*Ans.* The lists which I have read into the record do not include all patents owned by the Goodyear Shoe Machinery Company relating to machines of the types named. The lists are limited to patents the inventions on which were used in the machines named.

*Int. 9.* What do you mean by "machines named"? I merely took the words "sewing machine" as an example. Does the list include all the patents on the welt-sewing machine — just take that one machine that the Goodyear Company owned or controlled at the time it went into the United Company, and that expired prior to December 12, 1911?

*Ans.* The list of patents on the welt-sewing machine includes all the patents covering inventions used in the welt-sewing machine of

the Goodyear Shoe Machinery Company in February, 1899, which expired prior to December 12, 1911.

*Int.* 10. Then the list of expired patents, for example, on welt-sewing machine, which you have read into the record and which were acquired by the United Company of the Goodyear Shoe Machinery Company, includes all patents which expired prior to December 12, 1911, regardless of the date of assignment by the Goodyear Company to the United Company?

*Ans.* Yes, sir. I did not pay the slightest attention to the date of the assignment, because that was done at the convenience of counsel. I assumed, in preparing that list, that all the patents that read on those machines were under the control of the United Company from that date.

*Int.* 11. While I mentioned there the welt-sewing machine specifically, your answer would also apply to outsole stitching machines or any other machines acquired from the companies mentioned in the petition that became a part of the United Company?

*Ans.* Yes. My answer would apply likewise to all of the machines named by me.

*Direct Examination by ALLEN WEBSTER, Esq., of Counsel for Complainant.*

*Int.* 12 (*by Mr. Webster*). The lists you have read into the record, as I understand your statement, are lists of patents expiring on or before December 12, 1911, covering inventions embodied in machines manufactured by the several companies which together went to make up the United Shoe Machinery Company. Am I correct in that understanding?

*Ans.* Yes; inventions embodied in the machines named.

*Int.* 13. Now, have you a list of patents owned or controlled by said several companies, which patents the inventions of which were not embodied in machines of said companies and which patents expired on or before December 12, 1911?

*Ans.* No, sir; I have not.

*Int.* 14. Could you procure such lists without serious inconvenience?

Mr. CHOATE. I do not see how that is included in this issue submitted to the Examiner.

Mr. WEBSTER. Let him say whether he could or not.

Mr. CHOATE. Well, I suppose it is possible, if men enough and time enough are taken, to procure any of those lists, but I do not see why he should be asked to do it.

Mr. WEBSTER. Do you instruct him not to answer?

Mr. CHOATE. No. I object to the question.

Mr. WEBSTER. The witness should say something.

The WITNESS. Am I instructed —

Mr. CHOATE. It seems to me that the question is outside the scope of the issue submitted to this Examiner. You can state how long it might take you to compile such list, how many men you would have to put on.

The WITNESS. If I were to present this list tomorrow, probably the preparation and verifying of the list would require that the entire force of the patent department work most of the night.

Mr. CHOATE. I think I really ought to insist upon the ordinary rule that the examination be by one counsel. I have not been very strict about that.

The EXAMINER. Do you apprehend that the Examiner has any control over that other than note your objection on the record?

Mr. CHOATE. Perhaps this will be sufficient.

Mr. GREGG. I have no objection to putting the questions through Mr. Webster.

*Int. 15.* Kindly state whether the inventions of any of the patents you have not specified and which expired prior to December 12, 1911, which patents were owned or controlled by the several companies going to make up the United Company, were incorporated in any machines afterwards manufactured by the United Company. This relates, of course, to the types of machines which I will enumerate: welt turn machines, welt sewing machines, out-sole stitchers, lasters, sole layers, sole levelers, rough rounders, loose nailers and heelers.

*Ans.* It is quite possible that inventions of patents not embodied in commercial machines just prior to February, 1899, were subse-

quent to that date embodied by the United Shoe Machinery Company in different models or types of machines. I could not answer more definitely without an extended investigation. I now, of course, have reference to patents relating to machines of the types named in the lists which expired prior to December 12, 1911.

Mr. CHOATE. Have you completed your examination of Mr. Howard?

Mr. WEBSTER. The present examination.

*Cross Examination by CHARLES F. CHOATE, Jr., Esq., of Counsel for Defendants.*

*Cross-Int.* 16. In answer to questions of counsel for the United States, you read from lists which you had prepared, which lists show the patent protection upon the various machines which you have named between February, 1899, and the present date?

*Ans.* Yes, sir.

*Cross-Int.* 17. And have you those lists there before you?

*Ans.* Yes, sir.

*Cross-Int.* 18. In some instances were inventions embodied in machines prior to December 12, 1911, upon which patents have since been granted?

*Ans.* Yes, sir.

Mr. CHOATE. I offer these lists and ask to have them put into the record in full as to what Mr. Howard would have testified constituted the patent protection on the machines inquired of by the counsel for the United States during the period between February, 1899, and the present time.

Mr. WEBSTER. That is put in as defendants' exhibit?

Mr. CHOATE. Yes; for convenience, I would like to have them go into the record at this point. It will all go in as one exhibit.

[*List of patents on inventions embodied in machines inquired about by counsel for the United States between February, 1899, and the present time offered in evidence, and marked "Defendants' Exhibit 105", appended hereto, as follows:*]

**DEFENDANTS' EXHIBIT 105.**

[Put in Evidence, page 2112.]

**LASTING MACHINE: CHASE.***Patents.*

329,366	Oct. 27, 1885	Crisp	Tacking Machine
337,925	Mar. 16, 1886	Chase	Lasting Machine for Boots or Shoes
340,860	Apr. 27, 1886	Chase	Lasting Machine
364,088	May 31, 1887	Chase	Machine for Lasting Boots or Shoes
376,368	Jan. 10, 1888	Chase	Lasting Machine
483,375	Sept. 27, 1892	Chase	Tack Driving Mechanism
545,052	Aug. 27, 1895	Chase	Lasting Machines
558,011	Apr. 7, 1896	Chase	Press
569,182	Oct. 13, 1896	Dunphy	Last Clasp for Lasting Machines
569,231	Oct. 13, 1896	Ray	Pad Holder for Lasting Machines
569,590	Oct. 13, 1896	Shaw	Hand Tacking Machine
571,339	Nov. 17, 1896	Chase	Lasting Machine
571,404	Nov. 17, 1896	Shaw	Lasting Machine
571,429	Nov. 17, 1896	Chase	Lasting Machine
1,053,612	Feb. 18, 1913	Keyes	Reel

**LASTING MACHINE: CONSOLIDATED HAND METHOD.***Patents.*

274,207	Mar. 20, 1883	Matzeliger	Lasting Machine
281,306	July 17, 1883	Scott	Lasting Machine for Boots and Shoes
284,906	Sept. 11, 1883	Scott	Machine for Lasting Boots and Shoes
292,575	Jan. 29, 1884	Pearson	Lasting Machine
415,726	Nov. 26, 1889	Matzeliger	Mechanism for Distributing Tacks, Nails, etc.
421,954	Feb. 25, 1890	Matzeliger	Nailing Machine
423,920	Mar. 25, 1890	Gooding & Ladd	Nail and Tack Driving Machine
423,921	Mar. 25, 1890	Gooding & Ladd	Pegging Machine
423,922	Mar. 25, 1890	Gooding & Ladd	Lasting Machine
423,937	Mar. 25, 1890	Matzeliger	Tack Separating and Distributing Mechanism
441,482	Nov. 25, 1890	Gooding & Ladd	Nail Driving Machine
459,899	Sept. 22, 1891	Matzeliger	Lasting Machine
500,141	June 27, 1893	Ladd	Lasting Machine
510,972	Dec. 19, 1893	Ladd	Starting and Stopping Mechanism for Lasting Machines
510,973	Dec. 19, 1893	Ladd	Lasting Machine
510,975	Dec. 19, 1893	Ladd	Lasting Machine
510,976	Dec. 19, 1893	Ladd	Tacking Machine
510,977	Dec. 19, 1893	Ladd	Lasting Machine
510,978	Dec. 19, 1893	Ladd	Tack Separating and Feeding Mech- anism

523,939	July 31, 1894	Ladd	Lasting Machine
533,394	Jan. 29, 1895	Mosher	Clutch
562,119	June 16, 1896	Carter	Lasting Machine
564,931	July 28, 1896	Ladd	Lasting Machine
584,741	June 15, 1897	Ladd	Lasting Machine
584,742	June 15, 1897	Ladd	Lasting Machine
584,744	June 15, 1897	Ladd & McFeely	Lasting Machine
597,321	Jan. 11, 1898	Ladd	Lasting Machine
696,717	Apr. 1, 1902	Cavanagh	Lasting Machine
696,740	Apr. 1, 1902	Ladd	Lasting Machine
718,586	Jan. 13, 1903	Stiggins	Edge Gage
726,087	Apr. 21, 1903	McAuliffe & Hogan	Lasting Machine
751,128	Feb. 2, 1904	Winn	Lasting Machine
784,251	Mar. 7, 1905	DeMinico	Lasting Machine
867,469	Oct. 1, 1907	Bond	Lasting Machine
893,331	July 14, 1908	Ladd	Lasting Machine
931,809	Aug. 24, 1909	Stiggins	Lasting Machine
944,116	Dec. 21, 1909	Wade	Lasting Machine
946,620	Jan. 18, 1910	Stiggins	Lasting Machine
999,233	Aug. 1, 1911	Ladd & Stiggins	Lasting Machine
1,003,984	Sept. 26, 1911	Clary	Fastening Inserting Mechanism
1,005,234	Oct. 10, 1911	Ladd & Stiggins	Gripper for Lasting Machines
1,005,929	Oct. 17, 1911	Bond	Lasting Machine
1,009,054	Nov. 21, 1911	DeMinico	Lasting Machine
1,014,940	Jan. 16, 1912	Bond	Machine for Inserting Fastenings
1,022,402	Apr. 9, 1912	Chick	Lasting Machine
1,027,510	May 28, 1912	Stiggins	Cutting Device

*Applications.*

127,116	Oct. 13, 1902	Stiggins	Lasting Machine
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## LASTING MACHINE: IDEAL.

*Patents.*

329,282	Oct. 27, 1885	Copeland et al.	Lasting Machine
365,505	June 28, 1887	Copeland et al.	Lasting Machine for Boots or Shoes
422,734	Mar. 4, 1890	Copeland et al.	Lasting Machine
446,631	Feb. 17, 1891	Crisp et al.	Tack Driving Machine
455,174	June 30, 1891	Crisp et al.	Tack Driving Machine
465,073	Dec. 15, 1891	Copeland et al.	Lasting Machine
500,225	June 27, 1893	Crisp et al.	Tack Driving Machine
500,319	June 27, 1893	Crisp	Tack Driving Machine
521,954	June 26, 1894	Grandy	Lasting Machine
552,834	Jan. 7, 1896	Grandy	Lasting Machine
558,043	Apr. 14, 1896	Copeland et al.	Lasting Machine
571,429	Nov. 17, 1896	Chase	Lasting Machine
947,818	Feb. 1, 1910	Heffernan	Holddown Attachment for Lasting Machines
1,053,612	Feb. 18, 1913	Keyes	Reel

## LASTING MACHINE: McKAY &amp; COPELAND.

*Patents.*

286,898	Oct. 16, 1883	Brock	Lasting Machine
288,689	Nov. 20, 1883	Brock	Lasting Machine
302,885	Aug. 5, 1884	Brock	Lasting Machine
306,671	Oct. 14, 1884	Brock	Tack Driving Implement
371,816	Oct. 18, 1887	Brock	Lasting Machine
548,671	Oct. 29, 1895	Stirkler	Lasting Machine
548,862	Oct. 29, 1895	Brock	Lasting Machine
601,933	Apr. 5, 1898	Brock	Lasting Machine
601,935	Apr. 5, 1898	Brock	Lasting Machine
601,936	Apr. 5, 1898	Brock	Lasting Machine
823,664	June 19, 1906	Brock	Lasting Machine
1,021,860	April 2, 1912	Brock	Lasting Machine
1,030,564	June 25, 1912	Brock	Lasting Machine

## LASTING MACHINE: NO. 5 U. S. M. C.

*Patents.*

552,834	Jan. 7, 1896	Grandy	Lasting Machine
569,231	Oct. 13, 1896	Ray	Pad Holder for Lasting Machines
571,429	Nov. 17, 1896	Chase	Lasting Machine
588,568	Aug. 24, 1897	Grandy	Lasting Machine
601,934	Apr. 5, 1898	Brock	Lasting Machine
958,280	May 17, 1910	Plant	Lasting Machine
1,002,818	Sept. 12, 1911	Brock	Lasting Mechanism
Re.13,292	Sept. 19, 1911	Snow	Lasting Machine
1,004,659	Oct. 3, 1911	Keyes	Lasting Machine
1,017,124	Feb. 13, 1912	Winkley & Alley	Lasting Machine
1,018,025	Feb. 20, 1912	Winkley & Alley	Lasting Machine
1,018,477	Feb. 27, 1912	Brock	Lasting Machine
Re. 13,505	Jan. 7, 1913	Glass	Lasting Machine
1,053,612	Feb. 18, 1913	Keyes	Reel
1,066,374	July 1, 1913	Brock	Shoe Support
1,066,375	July 1, 1913	Brock	Lasting Machine

*Applications.*

522,987	Oct. 16, 1909	Brock	Heel Lasting Mechanisms
540,549	Jan. 28, 1910	Fausse	Lasting Machine
580,400	Sept. 3, 1910	Keyes	Hold-downs for Lasting Machines
600,073	Dec. 30, 1910	Fausse	Rebound Control for Lasting Machines
600,272	Dec. 31, 1910	Brown	Rebound Control for Lasting Carriages
709,971	July 17, 1912	Brock	Heel Bands
711,678	July 26, 1912	Brown	Hold Down Devices for Lasting Machines

## SHOE MACHINE: GOODYEAR WELT &amp; TURN.

SHOE MACHINE: GOODYEAR WELT &amp; TURN, MODEL E.

SHOE MACHINE: GOODYEAR WELT &amp; TURN, MODEL G.

SHOE MACHINE: GOODYEAR WELT &amp; TURN, MODEL K.

*Patents.*

317,759	May 12, 1885	French	Sole Sewing Machine
412,704	Oct. 8, 1889	French & Meyer	Shoe Sewing Machine
461,793	Oct. 20, 1891	Briggs	Method of Forming Chain Stitches
488,505	Dec. 20, 1892	LaChapelle	Tension Device for Sewing Machines
495,452	Apr. 11, 1893	Cole	Sewing Machine
507,873	Oct. 31, 1893	Arnold & Arnold	Shoe Sewing Machine
518,911	Apr. 24, 1894	Briggs	Take-up for Shoe Sewing Machines
533,301	Jan. 29, 1895	Laperriere	Sewing Machine
561,386	June 2, 1896	French	Sewing Machine
634,850	Oct. 10, 1899	Fowler & Warren	Shoe Sewing Machine
666,823	Jan. 29, 1901	Selby	Chain Stitch Shoe Sewing Machine
679,409	July 30, 1901	Alley	Take-up Mechanism for Sewing Machines
684,537	Oct. 15, 1901	Briggs	Awl Actuating Mechanism for Shoe Sewing Machine
684,538	Oct. 15, 1901	Briggs	Shoe Sewing Machine
687,719	Dec. 3, 1901	Briggs	Shoe Sewing Machine
700,279	May 20, 1902	Winkley	Welt Sewing Machine
710,612	Oct. 7, 1902	Richardson	Shoe Sewing Machine
732,729	July 7, 1903	French & Meyer	Thread-waxing Device for Sewing Machines
835,513	Nov. 13, 1906	Fuller	Guard for Inseam Sewing Machine
877,858	Jan. 28, 1908	Plant	Welt and Thread Cutting Means for Sewing Machines
877,859	Jan. 28, 1908	Plant	Welt Measuring Means for Sewing Machines
904,604	Nov. 24, 1908	Currier	Feed Point or Awl for Shoe Sewing Machine
930,115	Aug. 3, 1909	Alley	Thread Waxing Devices
935,726	Oct. 5, 1909	Alley	Sewing Machine
958,298	May 7, 1910	Plant	Sewing Machine
1,003,175	Sept. 12, 1911	Eppler	Inseam Shoe Sewing Machine
1,005,181	Oct. 10, 1911	Eppler	Welt Guide Mechanism for Welt Shoe Sewing Machines
1,015,304	Jan. 23, 1912	Eppler	Thread Waxing Devices for Sewing Machines
1,015,772	Jan. 30, 1912	Ashworth	Thread Waxing Devices
1,017,059	Feb. 13, 1912	McPherson & Orr	Welt Guide for Sewing Watertight Inseams
1,017,440	Feb. 13, 1912	Meyer	Shoe Sewing Machine
1,018,130	Feb. 20, 1912	Plant	Sewing Machine
Re. 13,374	Feb. 27, 1912	Plant	Sewing Machine

1,023,071	Apr. 9, 1912	Eppler	Thread Waxing Devices
1,028,474	June 4, 1912	Mayo	Tension Devices
1,030,512	June 25, 1912	Freese	Sewing Machine
1,030,742	June 25, 1912	Meyer	Tension Mechanism for Sewing Machines
1,030,743	June 25, 1912	Meyer	Tension Device for Sewing Machines
1,030,804	June 25, 1912	Briggs	Looper Mechanisms for Sewing Machines
1,030,816	June 25, 1912	Holmes	Sewing Machine
1,030,867	July 2, 1912	Briggs	Sewing Machine
1,048,511	Dec. 31, 1912	Eaton	Sole Rounding Machine

*Applications.*

247,117	Feb. 24, 1905	Eppler	Shoe Sewing Machine
447,542	Aug. 8, 1908	Eppler	Shoe Sewing Machine
529,412	Nov. 22, 1909	Eppler	Welt Guide Mechanism for Shoe Sewing Machine
558,866	May 2, 1910	Perry	Welt Sewing Machine
591,792	Nov. 11, 1910	Topham	Driving and Stopping Mechanism
640,836	July 27, 1911	Eppler	Sewing Machines
645,591	Aug. 23, 1911	Topham	Sewing Machines
682,243	Mar. 7, 1912	King	Welt Controlling Mechanism
683,087	Mar. 11, 1912	Eppler	Back Rest and Back Gage or Welt Guide Mechanisms for Shoe Sewing Machines
683,088	Mar. 11, 1912	Eppler	Shoe Sewing Machines
714,623	Aug. 12, 1912	Topham	Driving and Stopping Mechanism

## SEWING MACHINE: GOODYEAR UNIVERSAL INSEAM.

*Patents.*

366,935	July 19, 1887	Dancel	Sole Sewing Machine
412,703	Oct. 8, 1889	French & Meyer	Sewing Machine
488,505	Dec. 20, 1892	LaChapelle	Tension Device for Sewing Mch's.
495,452	Apr. 11, 1893	Cole	Sewing Machine
583,522	June 1, 1897	Warren	Sewing Machine
705,062	July 22, 1902	French & Meyer	Feeding Mechanism for Shoe Sewing Machines
705,063	July 22, 1902	French & Meyer	Shoe Sewing Machine
732,729	July 7, 1903	French & Meyer	Thread Waxing Device for Sewing Machines
781,596	Jan. 31, 1905	French & Meyer	Feeding Mechanism for Sewing Machines
790,790	May 23, 1905	French & Meyer	Shoe Sewing Machine
1,030,742	June 25, 1912	Meyer	Tension Mechanism for Sewing Machines

## LOCKSTITCH MACHINE: GOODYEAR OUTSOLE RAPID.

LOCKSTITCH MACHINE: GOODYEAR OUTSOLE RAPID, MODEL K.

LOCKSTITCH MACHINE: GOODYEAR OUTSOLE RAPID, MODEL M.

*Patents.*

366,935	July	19, 1887	Dancel	Sole Sewing Machine
412,703	Oct.	8, 1889	French & Meyer	Sewing Machine
424,966	Apr.	8, 1890	French & Meyer	Shuttle for Sewing Machines
473,870	Apr.	26, 1892	French & Meyer	Sole Sewing Machine
474,774	May	10, 1892	French & Meyer	Sole Sewing Machine
532,344	Jan.	8, 1895	Smith	Sewing Machine
553,139	Jan.	14, 1896	Smith	Sewing Machine
563,471	July	7, 1896	French & Meyer	Sole Sewing Machine
563,472	July	7, 1896	French & Meyer	Sole Sewing Machine
Re.11,578	Dec.	8, 1896	Hadaway	Welt Beveling Attachment for Sole Sewing Machines
582,510	May	11, 1897	Shriner & Adams	Sole Sewing Machine
641,330	Jan.	16, 1900	Rush	Needle Lubricating Device for Sewing Machines
675,783	June	4, 1901	Meloon	Guide for Shoe Sewing Machines
704,457	July	8, 1902	Hadaway	Shoe Sewing and Welt Beveling Machine
704,458	July	8, 1902	Hadaway	Shoe Sewing and Welt Beveling Machine
710,612	Oct.	7, 1902	Richardson	Shoe Sewing Machine
710,613	Oct.	7, 1902	Richardson	Presser Foot Mechanism for Shoe Sewing Machine
732,729	July	7, 1903	French & Meyer	Thread Waxing Device for Sewing Machines
900,925	Oct.	13, 1908	Haradon	Welt Channeling Attachment for Sole Sewing Machines
906,092	Dec.	8, 1908	Bayard	Apron for Shoe Stitching Machine
922,696	May	25, 1909	Hadaway	Needle Lubricating Device
930,115	Aug.	3, 1909	Alley	Thread Waxing Devices
940,055	Nov.	16, 1909	Plant	Sole Sewing Machine
940,723	Nov.	23, 1909	Plant	Channeling Device for Sewing Machines
940,725	Nov.	23, 1909	Plant	Shoe Sewing Machine
946,591	Jan.	18, 1910	Arnold	Sewing Machine
963,761	July	12, 1910	Hadaway	Sole Sewing Machines
974,309	Nov.	1, 1910	Thayer	Shuttle Tension Device
974,757	Nov.	1, 1910	Dow	Shuttle Tension Device
1,015,023	Jan.	16, 1912	Hatch	Bobbin Holding Device
1,015,304	Jan.	23, 1912	Eppler	Thread Waxing Devices for Sewing Machines
1,015,772	Jan.	30, 1912	Ashworth	Thread Waxing Devices
1,017,380	Feb.	13, 1912	Cady & Thayer	Welt Channeling Attachment for Sole Sewing Machines
1,017,397	Feb.	13, 1912	Fletcher & McLean	Sewing Machine

1,023,071	Apr.	9, 1912	Eppler	Thread Waxing Devices
1,027,791	May	28, 1912	Allen	Shoe Sewing Machine
1,030,582	June	25, 1912	Hadaway	Presser Foot Mechanism for Sewing Machines
1,030,742	June	25, 1912	Meyer	Tension Mechanism for Sewing Machines
1,030,767	June	25, 1912	Beckman	Grooving Device for Shoe Sewing Machines
1,048,565	Dec.	31, 1912	Meyer	Bobbin Holding Device for Lock-stitch Sewing Machines
1,048,719	Dec.	31, 1912	Meyer	Shoe Sewing Machines

*Applications.*

321,958	June	16, 1906	Nash	Sewing Machines
488,430	Apr.	7, 1909	Allen	Tension Device
573,365	July	23, 1910	LaChapelle	Presser Foot Mechanism
576,053	Aug.	8, 1910	Bolton	Stitch Down Welt Guides
585,116	Oct.	3, 1910	Ashworth	Sewing Machines
591,792	Nov.	11, 1910	Topham	Driving and Stopping Mechanism
621,286	Apr.	15, 1911	Topham	Sewing Machines
635,114	June	24, 1911	Dow	Sewing Machines
645,591	Aug.	23, 1911	Topham	Sewing Machines
656,685	Oct.	25, 1911	Topham	Sole Sewing Machines
663,701	Dec.	4, 1911	Brogan	Sewing Machines
699,137	May	23, 1912	Ashworth	Sewing Machines
699,138	May	23, 1912	Ashworth	Sewing Machines
699,364	May	24, 1912	Ashworth	Sewing Machines
714,623	Aug.	12, 1912	Topham	Driving and Stopping Mechanism

## LEVELING MACHINE, MODEL A: ATLAS.

*Patents.*

557,744	Apr.	7, 1896	Winkley	Sole Laying Machine
627,034	June	13, 1899	Winkley	Sole Pressing Machine
703,204	June	24, 1902	Heys	Leveling Machine
818,503	Apr.	24, 1906	Winkley	Sole Pressing Machine
818,504	Apr.	24, 1906	Winkley	Sole Pressing Machine
845,714	Feb.	26, 1907	Mayo	Sole Pressing Machine
881,478	Mar.	10, 1908	Mayo	Sole Pressing Machine
930,823	Aug.	10, 1909	Winkley	Form Adjusting Device

*Applications.*

674,686	Feb.	1, 1912	Preble	Sole Pressing Machine
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## LEVELING MACHINE: GOODYEAR AUTOMATIC SOLE.

## LEVELING MACHINE: GOODYEAR AUTOMATIC SOLE, MODEL B.

## LEVELING MACHINE: GOODYEAR AUTOMATIC SOLE, MODEL C.

*Patents.*

540,222	May 28, 1895	Winkley & Phillips	Sole Leveling Machine
540,223	May 28, 1895	Winkley & Phillips	Sole Leveling Machine
541,988	July 2, 1895	Winkley	Sole Leveling Machine
546,211	Sept. 10, 1895	Winkley & Phillips	Sole Leveling Machine
555,548	Mar. 3, 1896	Winkley	Sole Leveling Machine
580,746	Apr. 13, 1897	Winkley	Jack for Sole Leveling Machines
610,314	Sept. 6, 1898	Winkley	Sole Leveling Machine
668,635	Feb. 26, 1901	Gifford	Sole Levelling Machine
677,550	July 2, 1901	Meyer	Jack for Holding Boots or Shoes
692,401	Feb. 4, 1902	Winkley	Sole Leveling Machine
889,287	June 2, 1908	Winkley	Sole Leveling Machine
1,011,301	Dec. 12, 1911	Winkley	Sole Leveling Machine
1,054,263	Feb. 25, 1913	Winkley	Automatic Sole Leveling Machine

*Applications.*

750,325	Feb. 24, 1913	Baxter	Shoe Jacks
750,326	Feb. 24, 1913	Baxter	Leveling Machines

LEVELING MACHINE: GOODYEAR WELT AND TURN  
(TURN WORK)*Patents.*

563,487	July 7, 1896	Howe	Machine for Beating out Shoe Soles
580,746	Apr. 18, 1897	Winkley	Jack for Sole Leveling Machines
677,550	July 2, 1901	Meyer	Jack for Holding Boots or Shoes
916,021	Mar. 23, 1909	Rigby	Sole Leveling Machine
925,509	June 22, 1909	Rigby	Sole Leveling Machine
996,707	July 4, 1911	Eppler	Sole Leveling Machine
1,004,155	Sept. 26, 1911	Eppler	Sole Leveling Machine

*Application.*

649,614	Sept. 16, 1911	Eppler	Shoe Supporting Jacks
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LEVELING MACHINE: GOODYEAR WELT AND TURN  
(WELT WORK)*Patents.*

580,746	Apr. 13, 1897	Winkley	Jack for Sole Leveling Machines
677,550	July 2, 1901	Meyer	Jack for Holding Boots or Shoes
925,509	June 22, 1909	Rigby	Sole Leveling Machine
996,707	July 4, 1911	Eppler	Sole Leveling Machine
1,004,155	Sept. 26, 1911	Eppler	Sole Leveling Machine

*Application.*

649,614	Sept. 16, 1911	Eppler	Shoe Supporting Jacks
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**LEVELING MACHINE, MODEL A: HERCULES.**  
**LEVELING MACHINE, MODEL B: HERCULES.**

*Patents.*

684,239	Aug. 8, 1901	Heys	Leveling Machine
707,414	Aug. 19, 1902	Heys	Leveling Machine
861,746	July 30, 1907	Mayo	Sole Pressing Machine
884,144	Apr. 7, 1908	Frasier	Sole Pressing Machine
932,220	Aug. 24, 1909	Winkley	Sole Pressing Machine
944,620	Dec. 28, 1909	Holt	Sole Pressing Machine
982,267	Jan. 24, 1911	Gouldbourn	Sole Pressing Machine
997,798	July 11, 1911	Frasier	Sole Pressing Machine

**LAYING MACHINE: (SINGLE) GOODYEAR IMPROVED SOLE****LAYING MACHINE: (TWIN) GOODYEAR IMPROVED SOLE.****LAYING MACHINE: MODEL B, GOODYEAR IMPROVED SOLE.****LAYING MACHINE: MODEL C, GOODYEAR IMPROVED SOLE.***Patents.*

304,416	Sept. 2, 1884	Eppler	Sole Laying Machine
315,923	Apr. 14, 1885	Eppler	Sole Laying Machine
335,016	Jan. 26, 1886	Coupal & Wood	Sole Laying Machine
353,251	Nov. 23, 1886	Coupal	Sole Laying Machine
362,447	May 3, 1887	Holland	Sole Laying Machine
375,549	Dec. 27, 1887	Hamm	Sole Laying Machine
376,406	Jan. 10, 1888	Coy	Sole Laying Machine
694,367	Mar. 4, 1902	Gifford	Pressing Form for Sole Laying Machines
781,636	Feb. 7, 1905	Davenport	Sole Pressing Machine
930,272	Aug. 3, 1909	Davenport	Sole Pressing Machine
942,133	Dec. 7, 1909	Davenport	Sole Pressing Pad
1,018,069	Feb. 20, 1912	Miller	Sole Laying Machine
1,066,473	July 8, 1913	Davenport	Sole Pressing Machine

**LAYING MACHINE: GOODYEAR ROTARY SOLE.***Patents.*

549,471	Nov. 5, 1895	Winkley	Form for Sole Laying Machines
553,948	Feb. 4, 1896	Winkley	Sole Laying Machine
553,949	Feb. 4, 1896	Winkley	Sole Laying Machine
557,744	Apr. 7, 1896	Winkley	Sole Laying Machine
579,205	Mar. 23, 1897	Winkley	Jack for Shoe Machines
579,206	Mar. 23, 1897	Winkley	Form for Sole Laying Machines
584,038	June 8, 1897	Gifford	Pressing Form for Sole Laying Machines
610,315	Sept. 6, 1898	Winkley	Mechanism for Adjusting Forms of Sole Laying Machines
627,035	June 13, 1899	Winkley	Sole Laying Machine
640,063	Dec. 26, 1899	Winkley	Sole Laying Machine

ROUNDING AND CHANNELING MACHINE: GOODYEAR UNIVERSAL.  
 ROUNDING AND CHANNELING MACHINE: GOODYEAR UNIVERSAL  
 MODEL E.

ROUNDING MACHINE: BRIGGS ROUGH.

*Patents.*

463,967	Nov. 24, 1891	Briggs	Rough Rounding and Channeling Machine
463,982	Nov. 24, 1891	Briggs	Rough Rounding and Channeling Machine
511,263	Dec. 19, 1893	Briggs & Dancel	Rough Rounding and Channeling Machine
529,900	Nov. 27, 1894	French & Meyer	Channeling Machine
579,144	Mar. 23, 1897	Gifford	Sole Machine
595,764	Dec. 21, 1897	Cole	Rounding and Channeling Machine
599,602	Feb. 22, 1898	French & Meyer	Trimming and Channeling Machine
600,883	Mar. 22, 1898	French & Meyer	Sole Channeling and Trimming Machine
625,633	May 23, 1899	Alley	Rough Rounding and Channeling Machine
630,338	Aug. 8, 1899	French & Meyer	Rounding and Channeling Machine
630,339	Aug. 8, 1899	French & Meyer	Sole Trimming and Channeling Machine
682,679	Sept. 17, 1901	Fowler	Rounding and Channeling Machine
684,359	Oct. 8, 1901	Eaton	Rough Rounding and Channeling Machine
808,628	Jan. 2, 1906	Brainard	Rough Rounding and Channeling Machine
845,277	Feb. 26, 1907	Thayer	Sole Rounding and Channeling Machine
878,475	Feb. 4, 1908	Alley	Rough Rounding and Channeling Machine
878,478	Feb. 4, 1908	English	Rough Rounding Machine
1,010,854	Dec. 5, 1911	Cady	Rounding Machine
1,030,606	June 25, 1912	Perry	Machines for Operating on Shoe Soles
1,030,607	June 25, 1912	Perry	Machines for Operating on the Soles of Shoes

*Applications.*

719,706	Sept. 11, 1912	Perry	Machines for Operating on Shoes
729,235	Nov. 4, 1912	Perry	Machines for Operating on Shoes

NAILING MACHINE: HUNGARIAN.  
 NAILING MACHINE: LOOSE.  
 NAILING MACHINE: NO. 2 LOOSE.

*Patents.*

265,227	Sept. 26, 1882	Goddu	Machine for Driving Sole Fastenings
356,107	Jan. 18, 1887	Dunham	Boot or Shoe Nailing Machine
383,455	May 29, 1888	Goddu	Nailing Machine
490,624	Jan. 24, 1893	Goddu	Machine for Uniting Soles to Uppers
582,579	May 11, 1897	Cutter	Nailing Machine for Boots or Shoes
582,580	May 11, 1897	Cutter	Mechanism for Operating Stock Supports for Nailing Machines
609,874	Aug. 30, 1898	Casgrain	Jack for Slugging and Nailing Heels
705,512	July 22, 1902	Casgrain	Jack for Slugging and Nailing Machines
786,190	Mar. 28, 1905	Casgrain	Nailing Machine
856,399	June 11, 1907	Eaton	Hand Tacker
865,329	Sept. 3, 1907	Casgrain	Work-gage for Nailing Machines
886,313	Apr. 28, 1908	Cutter	Nailing Machine
919,424	Apr. 27, 1909	Cuff	Jack for Nailing and Slugging Machine
932,535	Aug. 31, 1909	Casgrain	Machine for Driving Fastenings
1,011,941	Dec. 12, 1911	Goddu	Work Supports
1,030,775	June 25, 1912	Goddu	Machines for Inserting Fastenings
1,031,438	July 2, 1912	Goddu	Work Support Actuating Mechanisms
1,045,717	Nov. 26, 1912	MacKenzie	Machines for Inserting Fastenings
1,045,784	Nov. 26, 1912	Goddu	Machines for Inserting Fastenings

*Applications.*

472,928	Jan. 18, 1901	Cuff	Gages
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LOADING AND ATTACHING MACHINE: McKAY AUTOMATIC HEEL.  
 LOADNG AND ATTACHING MACHINE: McKAY AUTOMATIC HEEL,  
 MODEL B.

*Patents.*

310,488	Jan. 6, 1885	Allen	Heel Nailing Machine for Boots or Shoes
317,851	May 12, 1885	Raymond	Heel Nailing Machine
346,137	July 27, 1886	Towns et al.	Nail Making and Distributing Machine.
413,554	Oct. 22, 1889	Raymond	Nail Machine
446,383	Feb. 10, 1891	Glidden et al.	Heeling Machine
502,667	Aug. 1, 1893	Glidden	Heel Compressing and Loading Machine

571,931	Nov. 24, 1896	Raymond et al.	Device for Feeding Nails
577,212	Feb. 16, 1897	Small	Nail Selecting and Distributing Machine
577,231	Feb. 16, 1897	Small	Nail Selecting and Distributing Machine
577,241	Feb. 16, 1897	Elliott & Glidden	Nail Assorting and Distributing Apparatus
584,601	June 15, 1897	Raymond	Heel Attaching Machine
589,501	Sept. 7, 1897	Glidden	Heel Attaching Machine
611,370	Sept. 27, 1898	Winter	Heel Nailing Machine
694,656	Mar. 4, 1902	Mayo	Heel Nailing Machine
707,136	Aug. 19, 1902	Mayo	Nail Assorting Mechanism
707,137	Aug. 19, 1902	Mayo	Nail Assorting Apparatus
707,138	Aug. 19, 1902	Mayo & Elliott	Nail Assorting Mechanism
707,139	Aug. 19, 1902	Mayo	Nail Assorting Mechanism
707,140	Aug. 19, 1902	Elliott	Nail Assorting Apparatus
707,143	Aug. 19, 1902	Lougee	Means for Detaining or Releasing Top Lifts in Heel Nailing Machines
874,921	Dec. 31, 1907	Baddock	Top Lift or Heel Holder for Heel Attaching Machine
876,626	Jan. 14, 1908	Elliott	Machine for Inserting Nails
884,513	Apr. 14, 1908	Mayo	Heel Nailing Machine
884,524	Apr. 14, 1908	Pope	Heel Attaching Machine
929,830	Aug. 3, 1909	Burnham	Heel Attaching Device
958,281	May 17, 1910	Plant	Heeling Machine Attachment
958,282	May 17, 1910	Plant	Heeling Machine
1,000,119	Aug. 8, 1911	Pope et al.	Heel Attaching Machine
1,000,534	Aug. 15, 1911	Mayo	Heel Nailing Machine
1,000,957	Aug. 15, 1911	Bates	Machine for Inserting Nails in Heels
1,005,303	Oct. 10, 1911	Pope	Nail Assorting Machine
1,017,778	Feb. 20, 1912	Lund	Machines for Attaching Heels
1,030,654	June 25, 1912	Elliott	Nailing Machine
1,030,680	June 25, 1912	Pope	Machines for Attaching Heels

*Applications.*

402,285	Nov. 15, 1907	Pope	Heel Attaching Machines
427,684	Apr. 17, 1908	Barton	Heel Attaching Machines
494,569	May 7, 1909	Bates	Heel Attaching Machines
556,326	Apr. 19, 1910	Glidden, J. E.	Heeling Machines
560,440	May 10, 1910	Lund	Heeling Machines
590,271	Nov. 2, 1910	Glidden, L. L.	Heeling Machines
620,207	Jan. 12, 1911	Pope	Nailing Machines
696,953	May 13, 1912	Buckminster	Work Supports

## NAILING MACHINE: ALPHA WOOD HEEL.

*Applications.*

386,588	Aug. 1, 1907	Tripp	Heel Attaching Machines
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## NAILING MACHINE: AMERICAN LIGHTNING.

*Patents.*

305,723	Sept.	23, 1884	Tyler	Heel-Nailing Machine
321,401	June	30, 1885	Tyler & Merritt	Heeling Machine
321,530	July	7, 1885	Raymond	Heel-Nailing Machine
343,703	June	15, 1886	Demary	Heel-Nailing Machine
446,885	Feb.	24, 1891	Pope	Heel-Nailing Machine
542,205	July	2, 1895	Pope & Waugh	Heel-Nailing Machine Attachment
584,752	June	15, 1897	Small	Heel-Nailing Machine
599,012	Feb.	15, 1898	Raymond	Heel-Nailing Machine
694,656	Mar.	4, 1902	Mayo	Heel-Nailing Machine
834,085	Oct.	23, 1906	Taylor	Heel for Boots and Shoes
887,870	May	19, 1908	Taylor	Machine for Inserting Nails
891,192	June	16, 1908	Small	Heel-Nailing Machine
958,302	May	17, 1910	Plant	Heeling Machine
1,000,957	Aug.	15, 1911	Bates	Machine for Inserting Nails in Heels

*Applications.*

60,622	May	17, 1901	Pope	Jack for Heel Nailing Machine
602,207	Jan.	12, 1911	Pope	Nailing Machines

## NAILING MACHINE: McKAY RAPID.

*Patents.*

310,488	Jan.	6, 1885	Allen	Heel-Nailing Machine for Boots or Shoes
446,383	Feb.	10, 1891	Glidden & Elliott	Heeling Machine
477,098	June	14, 1892	Brown & McCoy	Heel-Nailing Machine
584,601	June	15, 1897	Raymond	Heel-Attaching Machine
884,524	Apr.	14, 1908	Pope	Heel-Attaching Machine

*Cross-Int.* 19. Calling your attention for the moment to these lists, where it appears that the date of the patent is subsequent to February, 1899, my understanding is that such patents as are named subsequent to that date cover inventions which were embodied in the machines under which they are listed?

*Ans.* Yes, sir; that is correct.

*Cross-Int.* 20. Will you look at your list, please, patents on shoe machines Goodyear welt and turn? Among the names of persons to whom the patents were issued appears the name "Eppler". Do you know whether that was Andrew J. Eppler?

*Ans.* That was Andrew Eppler, formerly Andrew Eppler, Jr.

*Cross-Int.* 21. And is it the same Eppler whose name appears in the list of patents under the heading "Lockstitch Machine, Goodyear Outsole Rapid"?

*Ans.* Yes, sir.

*Cross-Int.* 22. Your lists as given to counsel for the United States refer to a leveling machine, Goodyear welt and turn for turn work, and leveling machine, Goodyear welt and turn for welt work. Do those refer to machines, the one for doing work on turn shoes and the other for doing leveling on welt shoes?

*Ans.* Yes, sir.

Mr. CHOATE. That is all.

[*Signature waived.*]

Attest: CHARLES K. DARLING, *Special Examiner.*

Adjourned to 11 A. M., Monday, July 28, 1913.

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By agreement of counsel the hearing was further suspended until 11 A. M. on July 29, 1913.

BOSTON, MASS., July 29, 1913.

#### DEPOSITION OF JOHN J. DOIDGE.

*Direct Examination by ALLEN WEBSTER, Esq., of Counsel for Complainant.*

*Int.* 1. Your name is John J. Doidge and you are the same John J. Doidge who has heretofore testified in this case?

*Ans.* Yes, sir.

*Int.* 2. In your former testimony you stated that the company with which you are connected had manufactured stitchers which I understand you testified were of the type known as the out-sole rapid lockstitch machine.

*Ans.* Yes, sir.

*Int.* 3. Kindly examine the cut I now hand you, the same being illustration found on page 24 of the United Shoe Machinery Company catalogue of 1902, and state whether the illustration is of a machine such as you understand to be known as an out-sole rapid lockstitch machine [*handing catalogue to witness*].

*Ans.* Yes, sir.

Mr. WEBSTER. The cut referred to by the witness, together with the printed matter on page 25, offered in evidence and marked "Plaintiff's Exhibit 207".

[*Cut of out-sole rapid lockstitch machine on page 24, and printed matter on page 25, of the catalogue, marked "Plaintiff's Exhibit 207".*]

Int. 4. Please examine the photograph which I now hand you, and state what it is a photograph of, and when, if you know, it was made [*handing photograph to witness*].

*Ans.* It is a photograph of a rapid out-sole lockstitch machine. The photograph was made yesterday.

Mr. WEBSTER. The photograph identified by the witness is offered in evidence and marked "Plaintiff's Exhibit 208".

[*Photograph of rapid out-sole lockstitch machine marked "Plaintiff's Exhibit 208".*]

Int. 5. Please state whether the machine of which Plaintiff's Exhibit 208 is a photograph is one of the machines referred to by you in your former testimony, as having been manufactured by the company with which you are connected, which were first made in the latter part of 1909.

*Ans.* [After examining photograph Exhibit 208.] Yes.

Int. 6. State whether the rapid out-sole lockstitch machines as shown in the photograph Plaintiff's Exhibit 208 are successfully operating machines.

Mr. CHOATE. Wait. That is not within the scope of the order, and the defendants object to it as not authorized by the order and as incompetent, inadmissible and immaterial.

Mr. WEBSTER. Well, I suppose he can answer the question and take it up later.

*Ans.* Yes.

Int. 7. State whether, to your knowledge, machines constructed like the machine illustrated in the photograph have been put in operation.

Mr. CHOATE. The same objection.

*Ans.* They have.

*Int.* 8. Mr. Howard, in his deposition, read into the record the following noted numbers and dates of patents as among the patents, the inventions of which were incorporated in lockstitch machines and which patents expired between February 7, 1899, and December 12, 1911, namely : —

French and Meyer, sole sewing machine, No. 474,774, dated May 10, 1892, expired May 10, 1909 ;

French and Meyer, sole sewing machine, No. 473,870, dated April 26, 1892, expired April 26, 1909 ;

French and Meyer, shuttle for sewing machines, No. 424,966, dated April 8, 1890, expired April 8, 1907.

State whether you have carefully examined the drawings of said patents and the descriptive portion of the specifications and compared such drawings and specifications with the machine illustrated in the photograph Plaintiff's Exhibit 208.

*Ans.* I would like to see the drawings.

*Int.* 9. Pardon me. [*Hands copies of patents to witness.*]

*Ans.* Yes, sir.

*Int.* 10. State whether the machine illustrated in photograph Plaintiff's Exhibit 208 is constructed and operates as shown in the patents referred to in the last question.

*Mr. CHOATE.* Please note defendants' objection to the question, as witness is not shown to be qualified to answer the question and as the subject-matter inquired of is not within the scope of the order, is immaterial and inadmissible.

*Ans.* As shown in Nos. 473,870 and 474,774, with one exception.

*Int.* 11. To save time, you might state the exception right here.

*Ans.* In drawing 474,774 it shows a flat spring and we used a U-shaped spring. That is the only difference. Part of 424,966 is used. I refer to the gate shown in Fig. 1, *h'*.

*Int.* 12. Were you present yesterday when Mr. Charles McC. Chapman, of New York, examined the machine you are testifying about?

*Ans.* Yes, sir.

*Int.* 13. State whether a welting machine was examined yesterday by yourself and Mr. Chapman.

*Ans.* There was.

*Int.* 14. Was a photograph made yesterday of the welting machine examined by yourself and Mr. Chapman yesterday?

*Ans.* Yes, sir.

*Int.* 15. Kindly examine photograph I now hand you and state whether it is a photograph of the machine examined by Mr. Chapman and yourself yesterday.

*Ans.* Yes, sir.

Mr. WEBSTER. Photograph identified by the witness introduced in evidence and marked "Plaintiff's Exhibit 209".

[*Photograph of welting machine marked "Plaintiff's Exhibit 209".*]

*Int.* 16. Please state whether the welter illustrated in Plaintiff's Exhibit 209 had any markings on it; and, if so, state what they were.

*Ans.* [After examining photograph.] The head is marked on a plate: "Property of the United Shoe Machinery Company, Lessor, Goodyear Department, Goodyear Welt and Turned Shoe Machine, No. 1941." The base had a plate marked: "423, Welt and Turn Shoe Machine, Patented. The property of the Goodyear Shoe Machinery Company, Lessor, Boston, Mass."

*Int.* 17. Mr. Howard testified with reference to patents on welters, the inventions of which had been incorporated in welters and which patents had expired between February 7, 1899, and December 12, 1911, among which patents he narrated the following:—

Patent to Z. T. French, sole sewing machine, No. 317,759, patented May 12, 1885; expired May 12, 1902;

Patent to French and Meyer, sole sewing machine, No. 412,704, dated October 8, 1889; expired October 8, 1906;

Patent to LaChapelle, tension device for sewing machines, No. 488,505, dated December 20, 1892; expired December 20, 1909;

Patent to Briggs, take-up for shoe sewing machines, No. 518,911, dated April 24, 1894, and expired April 24, 1911.

Kindly state whether you have examined the drawings and the

descriptive portions of the specifications of these several patents and whether you understand the construction therein illustrated and described [*passing copies of patents to witness*].

*Ans. [After examining patents.]* Yes, sir.

*Int. 18.* Please state whether the welting machine illustrated in photograph Plaintiff's Exhibit 209 is constructed as set forth in said patents examined by you, excepting, of course, the Briggs method patent.

*Mr. CHOATE.* Please note the defendants' objection to the question as not within the scope of the order, that the witness is not qualified to answer, and that the question is inadmissible and immaterial.

*Mr. WEBSTER.* Then you will have two objections, Mr. Choate; first, that it is not within the scope of the order; and, second, that he is not qualified,—

*Mr. CHOATE.* Yes.

*Ans.* The machine is built in accordance with No. 412,704—

*Mr. WEBSTER.* Do you wish to examine as to his qualifications?

*Mr. CHOATE.* No.

*Mr. WEBSTER.* Then I would like to have it noted on the record that Mr. Choate is invited to examine the witness as to his qualifications and declines.

[*Ans. continued:*] — 438,505, 518,911, and has some of the elements shown in 317,759.

*Int. 19.* I don't know whether you mean that the machine has the elements without the patents.

*Ans.* Some of the elements shown in 317,759.

*Int. 20.* But not all of them?

*Ans.* Not all of them.

*Int. 21.* Just here, kindly state how much experience you have had in the manufacture of shoe machinery.

*Ans.* I worked at shoe machinery business since 1888, with the exception of four years between the dates 1902 and 1907.

*Int. 22.* State whether you have had any experience in building machines such as are illustrated in the photograph of stitcher marked "Plaintiff's Exhibit No. 208".

*Ans.* Yes.

*Int.* 23. How many years' experience have you had with reference to building such machines?

*Ans.* Since 1907.

*Int.* 24. State whether you have had any experience in building, operating or repairing welting machines such as illustrated in photograph Plaintiff's Exhibit 209.

*Ans.* I have had experience in making parts for a similar machine. I might correct that and say somewhat similar.

Mr. WEBSTER. You have no objection to his putting in "somewhat" there?

Mr. CHOATE. That is all right.

*Int.* 25. State, if you know, whether welting machines like that illustrated in photograph Plaintiff's Exhibit 209 have been extensively and successfully operated.

*Ans.* I believe they have.

Mr. CHOATE. Please note my objection to the answer as not responsive to the question and as not competent or admissible evidence.

Mr. WEBSTER. The United States offers in evidence the patents referred to by the witness. The same are marked as follows:—"French and Meyer Patent [stitcher] No. 474,774, Plaintiff's Exhibit 210"; "French and Meyer Patent [stitcher] No. 424,966, Plaintiff's Exhibit 211"; "French and Meyer Patent [stitcher] No. 473,870, Plaintiff's Exhibit 212"; "French Patent [welter] No. 317,759, Plaintiff's Exhibit 213"; "French and Meyer Patent [welter] No. 412,704, Plaintiff's Exhibit 214"; "LaChapelle Patent [tension device] No. 488,505, Plaintiff's Exhibit 215"; "Briggs Patent [take-up for welters] No. 518,911, Plaintiff's Exhibit 216"; "Briggs Patent [method of operating chain stitches] No. 461,793, Plaintiff's Exhibit 217."

You may inquire, Mr. Choate.

Mr. CHOATE. If it would not inconvenience you, I should like to suspend this cross-examination until 2 o'clock.

Mr. WEBSTER, You may. Shall we take a recess, then?

Mr. CHOATE. No. Haven't you another witness you can put on?

Mr. WEBSTER. I do not care to put him on until you finish with Mr. Doidge.

*Cross Examination by CHARLES F. CHOATE, Esq., of Counsel for Defendants.*

*Cross-Int.* 26. Where was the photograph Exhibit 208 taken?

*Ans.* Taken in South Framingham in one of the buildings known as the R. H. Long Machinery Company.

*Cross-Int.* 27. Was the machine which is the subject of the photograph a machine which had been built under your direction?

*Ans.* Yes, sir.

*Cross-Int.* 28. How long ago?

*Ans.* Some time in August, 1909, we started to build that machine.

*Cross-Int.* 29. And in what part of the R. H. Long factory was it when photographed?

*Ans.* It was in the building nearest Winter Street bridge.

*Cross-Int.* 30. What is the name or designation of that room?

*Ans.* The particular room? The needle room.

*Cross-Int.* 31. How long, if at all, has the machine been in operation?

*Ans.* It has been in operation in the assembling room, stitched on, for an hour or more, some time the last of last month or the beginning of this present month.

*Cross-Int.* 32. Is that all the operating that was ever done, to your knowledge?

*Ans.* That is all.

*Cross-Int.* 33. It was built in 1909 and was not operated at all until about how long ago?

*Ans.* I understood you to ask me when we started to build the machines. That particular machine was assembled some time last month. We started to build the machines some time in 1909.

*Cross-Int.* 34. I asked you when this machine was built.

*Ans.* I don't think I could give you any better answer than that. Possibly some of the parts were manufactured during 1909, and the machine not assembled until last month.

Mr. CHOATE. Without giving the objections to the questions put on direct examination, the defendants propound the following questions *de bene*: —

*Cross-Int.* 35. In answer to Mr. Webster's questions, you examined the drawings attached to certain patents which he showed you, and you stated that the machine Exhibit 208 was constructed as shown in the drawings attached to two of those patents, namely, 473,870 and 474,774, with one exception. Do you mean that Exhibit 208 embodies all the features exhibited in drawings in 473,870?

*Ans.* Yes.

*Cross-Int.* 36. And do you mean that Exhibit 208 embodies all the features shown in the drawings attached to patent 474,774?

*Ans.* Yes.

*Cross-Int.* 37. And one feature taken from patent 424,966?

*Ans.* Yes.

*Cross-Int.* 38. Which feature was selected by you?

*Ans.* I believe I said *h'*.

*Cross-Int.* 39. You spoke of a spring; I want to know who selected that feature for embodiment in Exhibit 208. Did you do it, or did Mr. Webster, or did Mr. Long?

*Ans.* I picked it out; I believe I said *h'*; I should have said Figure 4.

*Cross-Int.* 40. You should have said Figure 4?

*Ans.* Yes.

*Cross-Int.* 41. What is Figure 4?

*Ans.* Locking gate.

Mr. WEBSTER. Now, Mr. Choate, do you think it is fair to interpose my name in there?

Mr. CHOATE. As I understood, on the examination before he said that he copied this machine under your direction.

Mr. WEBSTER. I do not think he has said that. My understanding is that he intended to testify and did testify that I told him he had a right to manufacture machines under expired patents.

Mr. CHOATE. Is there any question but you were the patent

adviser for R. H. Long before you became the patent adviser of the United States?

Mr. WEBSTER. It has nothing to do with it, has it?

Mr. CHOATE. I think it has something to do with it.

Mr. WEBSTER. I acted as one of Mr. Long's attorneys; I do not see any reason why you should insert my name in the record. You can if you want to.

Mr. CHOATE. Well, I think I will leave the question as it is. If the association is a proper one, I do not see why you should have any objection. I am quite sure that Mr. Doidge did say in his previous examination that this machine was copied at your suggestion.

Mr. WEBSTER. I challenge the statement upon the record.

*Cross-Int.* 42. You said that this machine Exhibit 208 was a successfully operating machine?

*Ans.* Yes, sir.

*Cross-Int.* 43. Was more than one of them made by the company with which you and Mr. Long were associated?

*Ans.* Yes, sir.

*Cross-Int.* 44. And did each embody the locking gate feature of which you have just spoken?

*Ans.* I believe I said that some of the features shown in 424,966 were embodied in the machine. I did not say that particular construction was embodied.

*Cross-Int.* 45. My question was: Did each of these successfully operating machines embody the locking gate feature that you have just spoken of?

*Ans.* Yes, sir.

*Cross-Int.* 46. Was that machine given a name as connected with Mr. Long, or with your company?

*Ans.* Do you mean the trade-name of the machine?

*Cross-Int.* 47. Yes.

*Ans.* Yes.

*Cross-Int.* 48. What was the name?

*Ans.* The Waldorf stitcher.

*Cross-Int.* 49. The Waldorf was the name of the shoe which Mr. Long manufactured?

*Ans.* There is such a shoe manufactured. I do not know who manufactures it.

*Cross-Int.* 50. Mr. R. H. Long is at the head of the company that makes the Waldorf shoe?

*Ans.* I don't know who is at the head of the company that makes the Waldorf shoe.

*Cross-Int.* 51. What is the name of your company?

*Ans.* The R. H. Long Machinery Company, Incorporated.

*Cross-Int.* 52. Is he connected with that company?

*Ans.* Yes, sir.

*Cross-Int.* 53. In what capacity?

*Ans.* Treasurer.

*Cross-Int.* 54. You, at some time, have testified that portions of Exhibit 208 were copied from similar parts of a machine leased from the United Shoe Machinery Company, have you not?

*Ans.* I don't believe so.

*Cross-Int.* 55. Well, is it the fact?

*Ans.* What is 208? [Examines Exhibit 208.] Now, what is the question?

*Cross-Int.* 56. [Question repeated by stenographer.]

*Ans.* I believe so; some time in 1907.

*Cross-Int.* 57. Well, it is the fact, isn't it?

*Ans.* I presume it must be if I stated it at that time.

*Cross-Int.* 58. And you testified that it was the only machine which you copied from the United Shoe Machinery Company's machines?

*Ans.* Do you mean by that, was one machine made? I don't think I understand the question.

*Cross-Int.* 59. No. I mean it was the only type of machine of which you made a copy.

*Ans.* The only type of the stitcher machine, or any machine?

*Cross-Int.* 60. Yes.

*Ans.* Yes.

*Cross-Int.* 61. Is that right?

*Ans.* Yes, that is right.

*Cross-Int.* 62. You testified that Exhibit 209 embodied the feat-

ures of certain patents which you named, which were 412,704, 488,505 and 518,911. Did Exhibit 209 embody all of the features of those three patents?

*Ans.* I shall have to examine the patents. [*Examines patents.*] It embodied all shown in 518,911 and 488,505; also some of the features shown in 412,704.

*Cross-Int.* 63. But not all?

*Ans.* Not all of them.

*Cross-Int.* 64. And it did not embody all of the features in 317,-759?

*Ans.* No, sir, it did not.

*Cross-Int.* 65. Did the patented features of which you have just spoken, embodied in the machine, comprise the entire machine, or were there parts of the machine in which those patented features were not embodied?

**Mr. WEBSTER.** Question objected to because it calls for the construction of what was not patented. The direct examination related only to a comparison of drawings and specifications, but not as to what was or was not patented. And the witness is instructed that he is not required to answer as an expert as to what is or is not patented.

*Ans.* There were parts of the machine in which those patented features were not embodied.

*Cross-Int.* 66. Was Exhibit 209 constructed in detail like the drawings attached to the patents the numbers of which you have given?

*Ans.* Not in all respects.

*Cross-Int.* 67. Do you mean that there were variations in size and form and feature of the details?

*Ans.* No; I did not mean that.

*Cross-Int.* 68. In some respects 209 differed in detail as to the size of the parts shown in the patent?

*Ans.* Most assuredly.

*Cross-Int.* 69. And in some respects as to the shape of the parts?

*Ans.* Yes, sir.

*Cross-Int.* 70. So that 209 is not an exact reproduction of the machine shown in the drawings attached to these patents?

*Ans.* No, sir; not in all respects.

*Cross-Int.* 71. And the modifications or alterations or variances were suggested by you?

*Ans.* I beg pardon?

*Cross-Int.* 72. Were the modifications or alterations or variances from the drawings suggested by you?

*Ans.* Well, I think I pointed out —

Mr. WEBSTER. What are you talking about now? The stitcher or the welter?

Mr. CHOATE. The welter.

[*Ans. continued:*] — I think I pointed out some of them.

*Cross-Int.* 73. And advised them?

*Ans.* Advised what?

*Cross-Int.* 74. Advised these differences?

*Ans.* I advised that there were such differences between the machine and the drawing.

*Cross-Int.* 75. I mean at the time the machine was made, did you advise that there were such differences?

*Ans.* That question has not come up, and I have not answered to that effect.

Mr. WEBSTER. Let me make a suggestion. You are laboring under the impression that he built the welter, and he did not. It is the United welter.

*Cross-Int.* 76. Let me ask you as to Exhibit 208. Was that machine in detail like the drawings shown in the patents that you referred to in connection with it?

*Ans.* Yes, with the exception of the differences that I pointed out.

*Cross-Int.* 77. Well, that was with reference to the locking gate?

*Ans.* The locking gate was one. There were some differences.

*Cross-Int.* 78. And spring?

*Ans.* And spring; yes, sir.

*Cross-Int.* 79. I mean as to detail of the size and shape of the

different parts; were they exactly as shown in the drawings attached to the patents?

*Ans.* There was a difference in cam in patent 473,870, outside of those I noted, the spring and lock gate.

*Cross-Int.* 80. Where was the photograph 209 taken?

*Ans.* In the needle room of the R. H. Long Machinery Company, South Framingham.

*Cross-Int.* 81. And how long had that machine been in the possession of the R. H. Long Machinery Company?

*Ans.* I could not tell you that.

*Cross-Int.* 82. Well, how long do you remember of its being there?

*Ans.* It has been there since I went there.

*Cross-Int.* 83. How many years is that?

*Ans.* I would like to modify that, to say that to the best of my knowledge it has been there since 1907, — in storage.

*Cross-Int.* 84. It was there when you came?

*Ans.* Not in that building.

*Cross-Int.* 85. Has it been in storage ever since you have been there?

*Ans.* Practically so.

*Cross-Int.* 86. It has not been in use?

*Ans.* Not to my knowledge.

*Cross-Int.* 87. The knowledge which you testified to, as to the successful operation of the stitching machine, had reference to the Waldorf stitcher?

*Ans.* Yes, sir.

*Cross-Int.* 88. And you expressed no knowledge, but only a belief, as to the welter of which you were asked, Exhibit No. 209?

*Ans.* That is correct.

*Cross-Int.* 89. Your machinery company has made no such welters?

*Ans.* No, sir.

*Cross-Int.* 90. And so far as Exhibit 209 itself is concerned, it has never been operated since you have been at the factory?

*Ans.* Not to my knowledge.

*Cross-Int.* 91. When you examined it yesterday, was it complete in all its parts or had anything been taken out of it?

*Ans.* Nothing removed to my knowledge. It was complete, so far as I know.

*Cross-Int.* 92. Can you say one way or the other?

*Ans.* I am quite positive the machine is complete in all its details.

Mr. CHOATE. That is all.

*Direct Examination resumed by Mr. WEBSTER.*

*Int.* 93. In cross-examination you were asked with reference to the particular stitching machine of which photograph Plaintiff's Exhibit 208 is a picture. State whether machines constructed like that machine have gone into successful use.

*Ans.* Yes, sir.

Mr. WEBSTER. That is all.

*Cross Examination resumed by Mr. CHOATE.*

*Cross-Int.* 94. I desire to ask one more question. The use of the machine photographed in Exhibit 208 is mostly by cobblers, isn't it,— shoe cobblers?

*Ans.* To a great extent; yes.

*Cross-Int.* 95. Now, Exhibit 209, you have said, had two plates on it; the head had a plate marked "No. 1941", the base had a plate which was marked "No. 423"?

*Ans.* Yes, sir.

*Cross-Int.* 96. Do you know when that head was put upon that base?

*Ans.* No, sir.

*Cross-Int.* 97. Or whether or not it was done there at your factory?

*Ans.* I don't believe it was done in the factory. It was taken right out of storage.

*Cross-Int.* 98. I say, do you know?

*Ans.* No, I do not know.

*Cross-Int.* 99. Did you have the machine taken out of storage?

*Ans.* Yes, sir.

*Cross-Int.* 100. Was it crated up when you took it out of storage?

*Ans.* No, sir.

**MR. CHOATE.** That is all.

JOHN J. DOIDGE.

Attest: CHARLES K. DARLING, *Special Examiner.*

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#### DEPOSITION OF CHARLES McCORMACK CHAPMAN.

*Direct Examination by ALLEN WEBSTER, Esq., of Counsel for Complainant.*

*Int.* 1. Please state your name, residence and profession.

*Ans.* Charles McCormack Chapman; age, forty-six; residence, New York City, State of New York; occupation, patent solicitor and patent expert.

*Int.* 2. Please state your education, experience and studies tending to fit you to testify with reference to patents and machines and a comparison between the two.

*Ans.* Education obtained in the public schools of the District of Columbia and the State of New York. Was graduated from the George Washington University, District of Columbia, with degrees of LL. B., LL. M., and Master of Patent Law. Was for over fourteen years an assistant examiner on the examining corps of the United States Patent Office, and for upwards of ten years have been practicing my profession. While in the Patent Office my duties involved the examination of applications for patents, comparison of claims contained therein with prior art structures, construction of claims in applications and patents, study of patents, inventions covered by them, and by applications filed in the Patent Office, and such other incidental duties as are necessarily involved in performing services as an assistant examiner upon the examining corps of the Patent Office. During the practice of my profession, in the past ten years, I have on numerous occasions rendered opinions concerning patents and the patentable novelty of inventions covered by them, have had occasion to construe and interpret claims of patents and apply the latter to machine structures. I have also had occasion to study the machine built under patents or in accordance

with them, and make comparisons of the same with other machines illustrating prior art. I have on several occasions given expert testimony for use in the Federal courts.

While in the Patent Office and for upwards of ten years I was employed on the class of sewing machines and during that period made a special study of and became familiar with all classes and types of machines having reference to shoe sewing and, in many instances, became familiar with other machines, incidental to shoe manufacturing. Since starting upon my professional career I have had occasion to make a special study of shoe-sewing machines and witness the practical operation of such machines and minutely examine the structures and modes of operation thereof.

Mr. WEBSTER. Mr. Choate, do you desire to examine the witness with reference to his qualifications?

Mr. CHOATE. I will keep that until the general cross-examination.

*Int. 3.* Kindly examine the photograph I now hand you, the same being marked "Plaintiff's Exhibit 209"; and state whether you identify the photograph; whether you were present when it was made, and whether you examined the machine illustrated in the photograph [*handing to witness Plaintiff's Exhibit 209*].

*Ans.* I have examined the Plaintiff's Exhibit No. 209 and identify the machine portrayed therein as one which I examined in one of the buildings of the R. H. Long Machinery Company at South Framingham, Massachusetts. This machine was photographed in my presence in that building, and in the presence of Mr. Doidge and Mr. Webster, counsel for the United States.

*Int. 4.* You did not say when. I don't know as I asked you when you examined it.

*Ans.* The machine was photographed yesterday, July 28, 1913.

*Int. 5.* Kindly state whether you examined the machine of which Plaintiff's Exhibit 209 is a photograph, and compared the same with patents.

*Ans.* I did examine such machine and made comparisons thereof with certain patents.

*Int. 6.* Kindly examine copies of patents marked "Plaintiff's Exhibits 213", "214", "215", "216" and "217", the same being

copies of patents referred to, with one exception, by Mr. Doidge, and state whether the weltting machine examined by you yesterday of which Plaintiff's Exhibit 209 is a photograph, is constructed and operates as set out in the machine patents referred to in the question. State also what marking, if any, you found on the weltting machine.

**Mr. CHOATE.** Please note the defendants' objection to the question as not within the scope of the order, and as immaterial, incompetent and inadmissible.

*Ans.* The machine which I examined yesterday and on several previous occasions, and which is portrayed in Plaintiff's Exhibit 209, has two name plates, one containing the following being the top plate or plate applied to the head of the machine : "The property of the United Shoe Machinery Company, Lessor, Goodyear Department, Goodyear Welt and Turn Shoe Machine, No. 1941." On the bottom plate applied to the upper portion of the stand, the following : "423, Welt and Turned Shoe Machine. Patented. The Property of the Goodyear Shoe Machinery Company, Lessor, Boston, Mass."

Referring first to Plaintiff's Exhibit 214, being French and Meyer patent No. 412,704, I made a very careful comparison of the machine of Exhibit 209 with said patent and found said machine to contain in all material respects substantially the same structure illustrated in the drawings of the said Plaintiff's Exhibit 214. One difference in the machine as compared with said Exhibit 214 is the structure of the auxiliary take-up illustrated in Plaintiff's Exhibit 216, being patent of Briggs No. 518,911. Another difference is that the machine of Exhibit 209 has not therein the particular structure of mechanism for actuating the welt guide ; that is to say, the structure contained in this Exhibit No. 213, being patent to French No. 317,759, is not contained in said machine Plaintiff's Exhibit 209.

*Int.* 7. You mean the machine illustrated in Plaintiff's Exhibit 209?

*Ans.* I am assuming that the machine and photograph are identical. This is also true of the structure illustrated in Figs. 3 and 4 of the drawings of Plaintiff's Exhibit 213. That is to say, the

so-called "sticker bar" is not contained in the machine of Plaintiff's Exhibit 209.

I found in the machine of Plaintiff's Exhibit 209 a portion of the structure illustrated in Plaintiff's Exhibit 215, being patent to LaChapelle No. 488,505. That is to say, I found in the said machine of Plaintiff's Exhibit 209 a device by means of which when the machine is brought to a standstill and the driving-shaft reversed to a predetermined position, the tension is released on the rolling tension device at the back of the machine. The portrayal of the structure in Fig. 3 of the said LaChapelle patent, Plaintiff's Exhibit 215, of the means by which the tension is released at a predetermined time, is not very clear, but the structure as contained in the machine of Plaintiff's Exhibit 209 would appear to be substantially as that of the said Fig. 3 of the LaChapelle patent, Plaintiff's Exhibit 215.

In examining the machine of Plaintiff's Exhibit 209 and comparing the same with Plaintiff's Exhibit 214, French and Meyer patent 412,704, I was careful to examine the various cam paths cut in the several discs carried by the driving-shaft, and to also, by operating the machine, obtain the various positions of parts portrayed in the several figures of the said French and Meyer patent Plaintiff's Exhibit 214, to verify the mode of operation of the machine of Plaintiff's Exhibit 209 with that operation which is illustrated by the said patent Plaintiff's Exhibit 214. In so doing, I found that the mode of operation of so-called method of forming chain stitches illustrated in Plaintiff's Exhibit 217, being patent to Briggs 461,793, was carried out in all material and substantial respects. A difference, however, between the two in favor of the machine of Plaintiff's Exhibit 209 and Plaintiff's Exhibit 214, French and Meyer patent 412,704, was observed by me in that feature of the finishing stroke of the needle which results in the complete setting of the stitch, which appeared to have been omitted from the Briggs patent structure, Plaintiff's Exhibit 217. I believe that answers the question.

*Int.* 8. State whether the welt examined by you yesterday and with reference to which you are now testifying was constructed

and operated as set out in the several machine patents you have referred to, and as referred to in the claims of said patents.

**Mr. CHOATE.** Note the defendants' objection to the question as not within the scope of the order and as inadmissible and immaterial.

**Ans.** With the exceptions heretofore noted the machine of Plaintiff's Exhibit 209 is constructed and operates substantially as set forth in the several patents referred to by me. There are claims in the patent 317,759, Plaintiff's Exhibit 213, which cover a construction not contained in the machine of Plaintiff's Exhibit 209. The claims I refer to are numbered 5 and 6 in the said Plaintiff's Exhibit 213, claim 5 referring to the means for varying the extent of, and the positive throw of, the welt guide slide, and the other claim, No. 6, referring to the sticker bar and means for actuating the same.

**Int. 9.** Kindly advise whether you have knowledge of a prior art as affecting the Briggs method patent, Plaintiff's Exhibit 217; and, if so, state what it is.

**Mr. CHOATE.** Note the defendants' objection to the question as not within the scope of the order and as immaterial and inadmissible.

**Ans.** In the prior art I found a patent granted to Stickel April 1, 1884, No. 296,084, for hand apparatus for forming stitches, which in the description of the mode of operation of the instrument made the subject of said patent describes the Briggs method of Plaintiff's Exhibit 217. The descriptive portion of the patent to Stickel referred to by me is that setting forth the mode of operation of the instrument in making chain stitches.

[*The copy of patent to Stickel offered in evidence and marked "Plaintiff's Exhibit 218".*]

**Mr. CHOATE.** Please note the defendants' objection to the introduction of the exhibit as not within the scope of the order and as incompetent, inadmissible and immaterial.

**Mr. WEBSTER.** In this connection, counsel for the United States offers copy of opinion and decree in the case of *United Shoe Machinery Company v. Duplessis Company*, as reported in Federal

Reporter, Vol. 155, page 842, Circuit Court of Appeals, First Circuit, the same having special reference to a controlling patent to French and Meyer, No. 412,704, in which it is held that said patent expired —

Mr. CHOATE. Do you think you should state what is held as long as you put in your exhibit?

Mr. WEBSTER. — in which the Government contends it is held that said patent expired September 17, 1902. I have not that copy here. Do you want to put it in later?

[*Opinion and decree referred to offered in evidence and marked "Plaintiff's Exhibit 219".*]

Mr. CHOATE. I shall object to it as not being within the scope of the order and as not the best evidence, and as incompetent and inadmissible and immaterial.

*Int.* 10. Kindly state whether you were present when photograph Plaintiff's Exhibit No. 208 was made, and whether you examined the machine therein illustrated in comparison with the patents, and when the photograph was made, if you know.

*Ans.* The machine portrayed in the photograph of Plaintiff's Exhibit No. 208 was photographed in my presence yesterday, July 28, 1913, and in the presence of Mr. Doidge and Mr. Webster, in one of the buildings of the R. H. Long Machinery Company at South Framingham, Massachusetts. I made a careful examination of this machine of the said Exhibit No. 208 with patents July 28, 1913, at South Framingham, Massachusetts.

*Int.* 11. Kindly state with what patents you made comparison of said machine and whether the machine so examined by you was constructed and operated as shown in said patents.

*Ans.* The patents which I examined and compared with the machine of Plaintiff's Exhibit 208 are Plaintiff's Exhibit 210, being French and Meyer patent No. 474,774; Plaintiff's Exhibit 211; Plaintiff's Exhibit 212, being French and Meyer patent No. 473,870. With the exception of a few immaterial details, I found the machine of Plaintiff's Exhibit 208 to be in all material respects substantially the same as that illustrated in the drawings of the Plaintiff's Exhibit 202, being French and Meyer patent 473,870. I also

found the machine of Plaintiff's Exhibit 208 to contain the structure, excepting one or two immaterial details illustrated in the Plaintiff's Exhibit 210, French and Meyer patent, 474,774. I found that the machine of the Plaintiff's Exhibit 208 in certain features differed quite materially from Plaintiff's Exhibit No. 211, being French and Meyer patent 424,966. The important point of difference resides in the structure of the bobbin case holding means, which is covered by the claims and portrayed in the drawings of Plaintiff's Exhibit 211, French and Meyer patent 424,966. Another difference between the last said exhibit and the machine of Plaintiff's Exhibit 208 resides in the means by which the thread is led from the bobbin to the outside of the shuttle, the machine of Plaintiff's Exhibit 208 being devoid of that particular means which is referred to and illustrated in Figures 1 and 2, and in details in Figure 3 of Plaintiff's Exhibit 211, French and Meyer patent 424,966.

*Int. 12.* Please state whether you found the machine of Plaintiff's Exhibit 208 to be constructed and operating as referred to in the claims of the several patents.

**Mr. CHOATE.** Please note the defendants' objection in the same phraseology as last given.

*Ans.* The structure called for by the three claims of Plaintiff's Exhibit 211, French and Meyer patent 424,966, is not contained in the machine of Plaintiff's Exhibit 208. The structure covered by the claims of Plaintiff's Exhibit 210, French and Meyer patent 474,774, is answered in all material respects by the machine of Plaintiff's Exhibit 208. With the possible exception of claims 8 and 10 of the Plaintiff's Exhibit 212, French and Meyer patent 473,870, the claims of said exhibit describe a structure contained in the machine of Plaintiff's Exhibit 208.

*Int. 13.* Should you say, from your knowledge, study and experience, that the patents to which you have referred in your deposition might properly be termed "basic patents" early in 1899, in reference to the machines in question, welters and stitchers?

**Mr. CHOATE.** Note the defendants' objection to the question as not within the terms of the order, as leading, inadmissible, incom-

petent and immaterial, and because the word "basic" has no recognized or accepted meaning with reference to the subject-matter.

Mr. WEBSTER. Attention is called to the fact that the words "basic patents" are found in the allegation of the petition, the paragraph beginning at the foot of page 15. For this reason the term is employed by counsel.

Mr. CHOATE. You may note the further objection that the inquiry, if material, relates to a matter to be decided by the court and not testified to by the witness.

[*The question is read.*]

*Ans.* Yes, with the exception of a few detailed claims contained in some of the patents examined by me, and with the exception of such patents as do not date back as early as 1899.

*Int.* 14. Just what do you mean by "do not date back"?

*Ans.* Some of the patents examined by me are not as early as 1899. In answering the foregoing question, I had in mind several patents which I examined in connection with those of the exhibits heretofore referred to by me; but in looking over the said exhibits I find that my answer is misleading,—that is, of the exhibits there are no patents subsequent to the year 1899.

*Int.* 15. Please explain what you mean by "patents subsequent"; that is, whether you mean patents the applications for which were filed in 1899.

*Ans.* I mean patents dated subsequent to the year 1899.

Mr. WEBSTER. You may inquire.

Mr. CHOATE. Does that complete your direct examination?

Mr. WEBSTER. So far as at present advised. I may think of something for which I pray your indulgence.

Mr. CHOATE. We should like, if convenient to you, to suspend until 2 o'clock tomorrow the cross-examination.

Mr. WEBSTER. I should be glad to accommodate you, Mr. Choate, at any time.

[*Adjourned to 2 p. m., Wednesday, July 30, 1913.*]

BOSTON, MASS., July 30, 1913.

Mr. CHOATE. Is there anything further you have to ask of Mr. Chapman?

Mr. WEBSTER. I do not think of anything now. There may be something later on.

Mr. CHOATE. There may be something that you have forgotten?

Mr. WEBSTER. Yes. If I have anything further, I presume it will develop.

Mr. CHOATE. Except that you may have inadvertently overlooked something, you have completed your examination?

Mr. WEBSTER. Yes. I am not hiding anything.

*Cross Examination by FREDERICK P. FISH, Esq., of Counsel for Defendants.*

Mr. FISH. Cross-examination *de bene esse*, and without waiving objection.

*Cross-Int.* 16. During what period of ten years were you employed on the class of sewing machines in the Patent Office?

*Ans.* I first went on to the class of sewing machines in the middle of the year 1886, and remained on that class until my resignation in 1902.

*Cross-Int.* 17. Referring to the Stickel patent, April 1, 1884, No. 296,084, for hand apparatus for forming stitches, you have stated that that patent, in the description of the mode of operation of the instrument made the subject of said patent, describes the Briggs method of Plaintiff's Exhibit 217, and that the descriptive portion of the patent to Stickel so referred to by you is that setting forth the mode of operation of the instrument in making the chain stitches. Please compare the mode of operation of the instrument of the Stickel patent in making chain stitches with the method patented in the Briggs patent as defined in the claim, and state definitely the resemblances and the differences between them in order that the exact meaning of your testimony on direct may be clear.

*Ans.* In the Stickel patent the method of making chain stitches is illustrated in Figures 4, 5, 6 and 7. The process or method for making said chain stitches, as illustrated in those figures, is

described on page 2 of the patent description, beginning in the paragraph line 6 and ending with line 31, page 2, Figure 11 being referred to as the culmination of the steps of the process thus described. The method of the Briggs patent, Plaintiff's Exhibit No. 217, involves the following steps: First, "passing a loop of thread through a hole in the materials", this step being illustrated in Figure 4 of the Stickel patent, wherein several chain stitches are illustrated as having been completed and another stitch started, the loop thereof indicated by S being shown about the body or stock of the needle; second, "inserting an instrument through the loop and holding the instrument in a second hole in the materials at the point desired for the next stitch", this step likewise being illustrated in Figure 4 of the Stickel patent, wherein the instrument, *including* the hooked needle, is shown thrust through the materials and entered also in the loop S of the stitch about to be made. In the hand operation of the instrument of the Stickel patent the needle is held as called for in this second step of the Briggs method; third, drawing on the supply end of the thread. This step is illustrated in the Stickel patent in that operation of the operative wherein he takes hold of the end of the thread indicated by Z in all the figures but not indicated by Z in Figure 4. This supply end of the thread is drawn upon by the operative for the purposes and to produce the position shown in Figure 5 of the Stickel patent, the fourth step of the Briggs method being "thus drawing the loop that is now around the instrument against the material". This step of the Briggs method is illustrated in Figure 5 of the Stickel patent, wherein the operative has drawn upon the supply end of the thread and looped it about the holder and engaged it in the hook of the needle and thus drawn the loop indicated in Figure 4 as S about the stock of the needle, as clearly shown in Figure 5 of the Stickel patent. Fifth, "forming another loop from the supply thread on the opposite side of the materials". This step of the Briggs method is also illustrated in Figure 5 of the Stickel patent, the said other loop being that which is in sight, Figure 5, in the hook of the needle. Sixth, "removing the instrument from the second hole in the materials and from the drawn down loop", this step being illustrated in suc-

cession in Figures 5, 6 and 7 of the Stickel patent, wherein the second loop of thread is drawn through the second hole and also through the drawn down loop, which latter, as shown in Figure 7 of the Stickel patent, now lies snugly against the surface of the material in the direct line of sight, the second loop in the said Figure 7 of the Stickel patent remaining in the hook of the needle and being shown as pulled through the preceding loop referred to in the said last step of the Briggs method as the "drawn down loop". Seventh, "and passing the second loop made from the supply thread through the second hole in the materials and through the drawn down loop", this step being also illustrated in Figure 7, as above described.

*Cross-Int.* 18. Does the man who is operating the Stickel tool grasp the thread with his fingers or hand at the point Z of No. 5, 6 and 8 and at the corresponding point of No. 4 of the drawings?

*Ans.* According to my understanding; yes.

*Cross-Int.* 19. Does he maintain his hand throughout the operation permanently in position and without moving it, or is he obliged to move it at all, as by a pull?

*Ans.* Do you mean with reference to Figure 4, or the other figures?

*Cross-Int.* 20. My question relates to the entire operation from No. 4 to No. 7 of the drawings.

*Ans.* With the understanding of your last statement, the operator holding the supply end of the thread as at Z necessarily manipulates the thread so as to loop it about the yielding holder as well as the needle, to place the thread in the hook of the needle to form the successive loops.

*Cross-Int.* 21. Is that all his active participation in the operation in so far as his manipulation of the thread at Z is concerned?

*Ans.* So far as my observation and my understanding of the mode of manipulating the instrument of the Stickel patent is concerned; yes.

*Cross-Int.* 22. What is it that transforms the open loop S of No. 4 to the corresponding loop S of No. 5, which seems to be drawn down?

*Ans.* Primarily, manipulation of the instrument by the handle thereof to seek a succeeding position in the materials, and simultaneously therewith carrying the loop drawn through the material by the hooked needle into the second position for penetration; secondly, manipulation of the supply end of the thread to draw the said first loop into position shown in Figure 5 prior to drawing the second loop through the materials and into and through the first loop.

*Cross-Int.* 23. You have named two actions. Are both involved in the transformation of the loop S at No. 4 into its condition in No. 5?

*Ans.* Yes.

*Cross-Int.* 24. Exactly how does the first agency act in so doing?

*Ans.* The hand of the operator manipulating the instrument by its handle draws a loop of thread through the material, the thread having previously been looped about the holder and the needle as in Figure 5, and also drawing the loop on the shank of the needle on the opposite side of the material, and the movement of the instrument bodily laterally or toward the left of Figure 4 in order to seek a new point for penetration of the instrument.

*Cross-Int.* 25. Do you mean that the movement of the needle laterally to the left of figure 4 transforms the loop S of Figure 4 into the condition in which the same is shown in Figure 5?

*Ans.* Oh, no. You asked me about the operation of the first instrumentality. The first instrumentality referred to by me was the hand of the operator manipulating the instrument by its handle.

*Cross-Int.* 26. Now I ask you how the hand of the operator manipulating the instrument by its handle transforms the loop S of No. 4 into the form in which the same appears in No. 5?

*Ans.* I described that operation fully in my preceding answer and stated two instrumentalities.

*Cross-Int.* 27. I am referring only to the first instrumentality.

*Ans.* I have not stated that the first instrumentality alone accomplishes that result. The second instrumentality aids in accomplishing that result.

*Cross-Int.* 28. To what extent does the first instrumentality in and of itself contribute toward accomplishing that result?

*Ans.* Without it the result could not be accomplished at all; therefore, it aids very materially in accomplishing the result.

*Cross-Int.* 29. How far in and of itself, without reference to the second instrumentality, is the result accomplished by the first instrumentality?

*Ans.* The first instrumentality primarily locates the loop of the stitch; secondarily, acts as the snubbing post around which each loop is drawn tightly and snugly against the material, and, thirdly, accomplishes the result of drawing the second or succeeding loops through each preceding loop.

*Cross-Int.* 30. And what draws the loop about this snubbing post?

*Ans.* The hand of the operator drawing upon the supply end Z of the thread, plus the interposition of the holder and the end or hooked end of the needle.

*Cross-Int.* 31. Starting with the condition of things shown in No. 5, does the hook of the needle continuously bear against the same point on the thread in proceeding from No. 5 to No. 6 and to No. 7?

*Ans.* Maybe and maybe not, depending entirely upon the operator.

*Cross-Int.* 32. Please explain the conditions under which it may be so and may not be so and the nature and occasion for the intervention of the operator to cause one or the other condition of operation.

*Ans.* Assuming that the supply comes from a spool or cop or holder for the thread held in the left hand of the operator and that the right hand of the operator grasps the handle of the instrument, the proper operation of the device or instrument in making the chain stitches according to the Stickel patent would be substantially as follows: Assuming several stitches to have been made, as illustrated in both Figures 4 and 5, a loop of the thread will be drawn through the materials, the hole through which said loop may be drawn having first been made by the hooked needle being pushed through the materials from front to rear. By withdrawing the needle from the material, a loop of thread will be formed on the

front side and will be held in the hook of the needle. The needle will then be shifted with the instrument bodily toward the left and the point of the needle will be placed at the position next desired for a stitch.

The needle will then be pushed through the material from front to rear, still holding the first loop laid in its hook, and passing its shank clear into that first loop, thus positioning the hook of the needle so that a second loop may be formed therein. The second loop will then be formed by first casting the supply end of the thread with the left hand or other hand of the operative about the holder—described in the Stickel patent as finger *d*—and in the hook of the needle. At the same time the operative with his left hand, pulling upon the supply end, draws the loop now about the shank of the needle tightly down about the latter, thus laying that loop upon the face of the fabric snugly against the same. In this position with parts as illustrated in Figure 5 a new loop or second loop will be pulled through the material and also drawn through the preceding loop, the right hand of the operative manipulating the instrument so as to produce this result. The instrument will then again be moved to the left, with the second loop in the hook of the needle, and a new position will be sought and the needle pushed through the material at that position. Successive steps will be carried out as previously described.

Mr. FISH. Objected to as altogether irresponsible.

[*The question is repeated.*]

The WITNESS. The only other condition that I can see called for by the question is that if the instrument is not properly manipulated, and if the left hand of the operator does not properly control the supply end *Z* of the thread, then it is possible that the thread may reeve in the hook of the needle. On the contrary, if the supply end of the thread *Z* is properly held and manipulated, that condition will not occur.

Cross-Int. 33. Fitting the action of the operator definitely and precisely to the conditions shown in No. 5, will you state how he is to manipulate the thread which he holds at *Z* in such a way that

the hook of the needle will bear constantly upon the same point on the thread during its subsequent operations?

*Ans.* As illustrated in Figures 5 and 6, and assuming the manipulation of the instrument through those two figures to the position of Figure 7, if the operator properly controls the Z end of the thread he will prevent it from reeveing in the hook of the needle, and will in manipulating the instrument give up the supply end of the thread proportionately with the movement of the needle rearwardly through the material into the position of Figure 7. This will result under the tension of the holder *d* in drawing and making the loop entirely from the thread extending from the hook of the needle to the material.

*Cross-Int.* 34. In Figure 5 the lowest thread of the loop S<sup>1</sup> is shown as extending from the fabric to the finger, which in Figure 2, for example, is marked "d". In No. 6 it is also shown as extending from the fabric to that finger, but the distance from the fabric to the finger is very much less. What has happened to that portion of the thread that has moved somewhere during the operation from No. 5 to No. 6?

*Ans.* By the manipulation of the supply end of the thread in casting it about the holder *d*, the operative has drawn upon the loop upon the face side of the material and tightly drawn that loop around the shank of the needle and snugly against the face of the material. The hook of the needle, in the meantime, by manipulating the instrument has been drawn closer to the rear face of the material and the operator has either at that time or at a period slightly before that time placed the thread in the hook of the needle and used the latter as an aid to drawing in the preceding loop.

*Cross-Int.* 35. And during that operation from No. 5 to No. 6, has or has not the thread rendered through the hook of the needle?

*Ans.* It may be so and it may not be so.

*Cross-Int.* 36. Isn't it inevitable that it should be so?

*Ans.* No.

*Cross-Int.* 37. Why not?

*Ans.* Because the operative, instead of tightening the supply end of the thread in the hook of the needle, as shown in Figure 5, may

wrap it about the shank of the needle below the hook, and thus draw in the thread to assume the position of Figure 6. He may then cast the thread into the hook of the needle as shown in Figure 6.

*Cross-Int.* 38. Of course, absolutely nothing of the sort is shown in No. 5, and you are clearly not entitled to advance any such hypothesis unless the specification justifies it. Where do you find such a suggestion in the specification?

*Ans.* The description of this patent to Stickel is, as I understand it, directed to those skilled in the art and not to novices; the description of the mode of producing a Stickel stitch is so clear to my mind that with the ordinary intelligence of the average operative the results described by me will necessarily be attained.

Mr. FISH. Objected to as irresponsible and volunteered. The question will be repeated.

[*The question is read.*]

The WITNESS. If my answer is not responsive, kindly explain in what particular.

*Cross-Int.* 39. Where do you find in the specification the suggestion of a mode of operation and of manipulation which you have made?

*Ans.* I first refer to the description of the Stickel patent, page 1, beginning on line 31. Next, page 1, beginning on line 54 and ending on line 72. Next, page 2, beginning on line 6 and ending on line 31.

*Cross-Int.* 40. You have referred to a great part of the descriptive matter of the specification. Can you not put your finger on any statement which justifies you in the hypothetical action which you have suggested?

*Ans.* The action which I have suggested is not hypothetical. On the contrary it is based on the description of the drawings of the Stickel patent, coupled with that necessary common sense of a skilled operative in manipulating the instrument for the purpose of producing the stitch described in the patent.

*Cross-Int.* 41. But it is not disclosed specifically in the specifications?

*Ans.* Why, the hands of the operator are not described in the

various manipulations of the tool, but those hand operations or manipulations of the instrument necessarily result from the clearly described mode of operation of the implement in the production of the stitch shown in Figure 11 through the several positions of Figures 4 to 7.

Mr. FISH. Objected to as irresponsible and voluntary. Question repeated.

[*The question is read.*]

The WITNESS. Please point out in what respect my answer is not responsive. I thought I had answered it fully.

Cross-Int. 42. The question related to a specific matter which the answer did not touch, even remotely. Question repeated.

[*The question is read.*]

Ans. Believing that my answers have been quite responsive, nevertheless I refer to the "process of making chain stitches as illustrated in Figures 4, 5, 6 and 7", which is set forth in the paragraph page 2, beginning line 6, of the Stickel patent. This description of mode of operation and process for producing the stitch illustrated in Figure 11 is my justification for the answers I have given as well as the mode of operation which I have described.

Cross-Int. 43. I call your attention to the following passage from and after line 15 of page 2 of the specification : —

"The thread is kept taut at Z, Fig. 5, and thereby the loop of the previous stitch on the top face of the leather is tightened. Then the tool is drawn back, the tension of the loop thereby increasing and swinging the movable finger inward toward the hook. The tension on the previous stitch will be constantly kept on until the needle with loop holder and finger has been drawn backward far enough so as to cause the loop of thread to slip off from the finger and to be drawn through the hole, as seen in Fig. 7."

Are these specific requirements of the specifications consistent with the hypothetical mode of operation which you have suggested?

Ans. I draw attention to the fact that in your quotation you omitted the words in brackets "[see Fig. 6]", which illustrates the tension position of the thread suggested in a portion of your quotation. Now, answering your question, there is no doubt that the

matter quoted by you is justification for the mode — not hypothetical — of operation described by me.

*Cross-Int.* 44. Loop S of No. 4 appears in a modified form in No. 5. Does it appear in No. 5 in its final form; and, if not, what further changes are there in it?

*Ans.* If by "modified form" you mean a different position, well and good, and assuming that to be your meaning my answer is that in the position of Figure 5 the same loop S has been drawn tightly about the shank of the needle and snugly against the face of the materials. This is not its final condition, that condition — final — not being reached until the needle has completely left in.

Mr. FISH. That is all, Mr. Webster.

Mr. WEBSTER. That completes the cross-examination of Mr. Chapman?

Mr. FISH. Yes.

The WITNESS. I would like to make a correction on the record.

Mr. FISH. There is one more question I would like to ask.

*Cross-Int.* 45. When was your attention first called to the Stickel patent with its relation to the Briggs patent?

*Ans.* If my memory serves me correctly, it was the year 1907, in the summer. I went to Washington for a client and made a search relative to the validity of the Briggs method and the claim of that patent. During that search I found the Stickel patent.

Mr. FISH. That is all, Mr. Webster.

The WITNESS. On typewritten page 2103 [printed page 2146] of the record in my answer with reference to Plaintiff's Exhibit 212, being French and Meyer patent 473,870, I stated that with the possible exception of claims 8 and 10 of that exhibit patent the claims of said exhibit described a structure contained in the machine of Plaintiff's Exhibit No. 208. I made that statement at that time because at the moment I could not remember whether the adjustments called for in claims 8 and 10 were present in the machine of Plaintiff's Exhibit 208. Since making that statement I have verified my recollection and claims 8 and 10 with the said exhibit machine, and find that the latter contains in all particulars the structure called for by claims 8 and 10. In making this veri-

fication I also discovered the fact that I omitted to state that claim 6 of the same patent exhibit is not found in the machine of Plaintiff's Exhibit 208.

Mr. WEBSTER. I do not think there will be any redirect, but in view of the fact that it is nearly time to close and I would like a little time to examine the record I will postpone the redirect examination until tomorrow. As at present advised, there will be no redirect examination of the witness. The postponement was had yesterday to enable the counsel for the defendants to prepare for cross-examination, and I apprehend there will be no objection to postponement of redirect until tomorrow.

[*Adjourned to 10 A. M., August 14, 1913.*

*Signature waived.*]

Attest: CHARLES K. DARLING, *Special Examiner.*

DISTRICT COURT OF THE UNITED STATES,  
DISTRICT OF MASSACHUSETTS.

IN EQUITY.

No. 301.

UNITED STATES OF AMERICA, PETITIONER,  
v.

UNITED SHOE MACHINERY COMPANY, OF NEW JERSEY, ET AL.,  
DEFENDANTS.

ORDER EXTENDING TIME FOR TAKING TESTIMONY BEFORE  
EXAMINER UNDER ORDER DATED JUNE 27, 1913.

August 8, 1913.

PUTNAM AND DODGE, JJ. (BROWN, J., concurring.) It is ordered (both parties consenting hereto) that the times for taking testimony under the order dated June 27, 1913, entitled "Order Directing the Taking of Testimony with Respect to Patents Before an Examiner" be extended two (2) weeks, the petitioner to be allowed until August 26, 1913, inclusive, for evidence in chief, the defendants to have until October 11, 1913, inclusive, for testimony in defence, and the petitioner to have to October 25, 1913, inclusive, for rebuttal.

By the Court,

CHARLES K. DARLING, Clerk.

The above-named parties hereby consent to the entry of the foregoing order.

July 31, 1913.

ALLEN WEBSTER,  
*Special Assistant to the Attorney General,*  
*for Petitioner.*  
CHARLES F. CHOATE, JR.,  
*for Defendants.*

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BOSTON, MASS., August 14, 1913.

Mr. WEBSTER. Mr. Chapman, our expert, met with an accident. His eye is affected, and he is under a doctor's care. This may necessitate the asking for further time. I offer now —

Mr. CHOATE. Before leaving that matter I should like to call attention to the statement made by Mr. Webster at the last hearing, to the effect that he had concluded his examination of Mr. Chapman.

Mr. WEBSTER. I think you will find that I stated I had concluded the examination of Mr. Chapman with reference to those particular things. I certainly have not concluded with reference to other branches of the case, other patents and other machines.

Mr. CHOATE. Before we began the cross-examination of Mr. Chapman, I asked: "Is there anything further you have to ask Mr. Chapman?" You said: "I do not think of anything now. There may be something later on." I said: "There may be something that you have forgotten?" You said: "Yes. If I have anything further, I presume it will develop." I said: "Except that you may have inadvertently overlooked something, you have completed your examination?" You said: "Yes. I am not hiding anything." We should not have cross-examined except upon that statement.

Mr. WEBSTER. It has been my expectation to put Mr. Chapman on with reference to a vast number of patents and machines. I put him on with reference to welters and stitchers which he had examined, and patents on welters and stitchers, but I have always expected and now expect to put him on with reference to other machines and other patents. My statement, read from the record

by Mr. Choate, has reference to that examination with reference to those machines and those patents.

Mr. CHOATE. We should like to have it noted that we reserve any rights that we may have to object to Mr. Chapman being recalled.

Mr. WEBSTER. I suppose we have a right to recall a witness. I offer now in support of the notice that we may have to ask for an extension of time an affidavit by Mr. Chapman, and a certificate from Dr. Haskell. I do not think these ought to be made a part of the record. It is not a part of the case, but I will file the same with the examiner and furnish opposing counsel a copy if they desire.

The EXAMINER. These are filed with the clerk of the court?

Mr. WEBSTER. Filed with the examiner, I suppose.

Mr. CHOATE. I would like to see a copy of them.

[*Mr. Choate examines two papers filed by Mr. Webster with the examiner.*]

Mr. WEBSTER. I offer now the opinion and decree which was offered on page 2101 of the testimony [printed page 2145], to which Mr. Choate's objection was entered at the time.

Mr. CHOATE. Will you note it again now, please?

Mr. WEBSTER. The petitioner offers as an exhibit catalogue of Goodyear Shoe Machinery Company dated on the title page "Boston, Mass., January 1, 1897".

Mr. CHOATE. Is this something that has been referred to before, or something that you offer now?

Mr. WEBSTER. Something that I am offering now. I have not any copy of it. I wish you would furnish me a good copy, as this is somewhat mutilated.

[*Catalogue of Goodyear Shoe Machinery Company, January 1, 1897, introduced in evidence and marked "Plaintiff's Exhibit 220".*]

Mr. CHOATE. I would like to have our objection noted to the introduction of that exhibit. It is not within the scope of the order; it is not properly identified; it is incompetent, immaterial and inadmissible.

Mr. WEBSTER. Petitioner offers in evidence copy of United

States patents referred to by witness Howard as being patents the inventions of which were incorporated in machines and which patents expired after the organization of the United Company, and before the filing of the petition, the same being as follows:—

Patent of J. E. Crisp, tacking machine, dated October 27, 1885, No. 329,366;

Patent to Frank Chase, lasting machine for boots or shoes, dated March 16, 1886, No. 337,925;

Patent to Frank Chase, lasting machine, dated April 27, 1886, No. 340,860;

Patent to Frank Chase, machine for lasting boots or shoes, dated May 31, 1887, No. 364,088;

Patent to Frank Chase, lasting machine, dated January 10, 1888, No. 376,368;

Patent to Frank Chase, tack driving mechanism, dated September 27, 1892, No. 483,375.

[*Group of patents, relating to lasting machines, etc., as above enumerated, introduced in evidence, in one binder, and marked "Plaintiff's Exhibit No. 221".*]

Mr. WEBSTER. Petitioner offers also under the same heading patent to Matthias Brock, assignor to McKay & Copeland Lasting Machine Company, lasting machine, dated October 16, 1883, No. 286,898;

Patent to Matthias Brock, assignor to McKay & Copeland Lasting Machine Company, lasting machine, dated November 20, 1883, No. 288,689;

Patent to Matthias Brock, assignor to McKay & Copeland Lasting Machine Company, lasting machine, dated August 5, 1884, No. 302,885;

Patent to Matthias Brock, assignor to McKay & Copeland Lasting Machine Company, tack driving implement, dated October 14, 1884, No. 306,671;

Patent to Matthias Brock, assignor to McKay & Copeland Lasting Machine Company, lasting machine, dated October 18, 1887, No. 371,816.

[*Group of patents to Matthias Brock, relating to lasting ma-*

*chines, etc., as above enumerated, introduced in evidence, in one binder, and marked "Plaintiff's Exhibit No. 222".]*

Mr. WEBSTER. The petitioner offers also under the same heading patent to George W. Copeland and Joseph E. Crisp, lasting machine, dated October 27, 1885, No. 329,282;

Patent to Copeland, Crisp and Grandy, lasting machine for boots or shoes, dated June 28, 1887, No. 365,505;

Patent to Copeland and Crisp, lasting machine, dated March 4, 1890, No. 422,734;

Patent to Crisp and Copeland, tack driving machine, dated February 17, 1891, No. 446,631;

Patent to Crisp and Copeland, tack driving machine, dated June 30, 1891, No. 455,174;

Patent to Copeland, Crisp and Grandy, lasting machine, dated December 15, 1891, No. 465,073;

Patent to Crisp and Junkins, tack driving machine, dated June 27, 1893, No. 500,225;

Patent to Crisp, tack driving machine, dated June 27, 1893, No. 500,319;

Patent to Grandy, lasting machine, dated June 26, 1894, No. 521,954.

[*Group of patents, relating to lasting machines and tack driving machines, as above enumerated, introduced in evidence, in one binder, and marked "Plaintiff's Exhibit 223".*]

Mr. WEBSTER. The petitioner offers also under the same heading patent to Allen, heel nailing machine for boots or shoes, dated January 6, 1885, No. 310,488;

Patent to Raymond, 2d, heel nailing machine, dated May 12, 1885, No. 317,851;

Patent to Towns and Raymond, 2d, nail making and distributing machine, dated July 27, 1886, No. 346,137;

Patent to Raymond, 2d, nail machine, dated October 22, 1889, No. 413,554;

Patent to Glidden and Elliott, heeling machine, dated February 10, 1891, No. 446,383;

Patent to Glidden, heel compressing and loading machine, dated August 1, 1893, No. 502,667.

[*Group of patents, relating to heel nailing machines, etc., as above enumerated, introduced in evidence, in one binder, and marked "Plaintiff's Exhibit 224".*]

Mr. WEBSTER. I offer copy of assignment from the Goodyear Shoe Machinery Company, of Connecticut, to the Goodyear Shoe Machinery Company, of Maine, dated March 9, 1893, recorded May 27, 1893, in Liber S. 48, page 122, of transfer of patents in the United States Patent Office. I ask that this assignment be marked for identification and I will procure a certified copy and introduce the same in evidence, provided opposing counsel insist upon a certified copy being produced.

Mr. CHOATE. What is that in support of, Mr. Webster?

Mr. WEBSTER. That one of the constituent companies was operating under the patents.

Mr. CHOATE. Please note our objection as immaterial, inadmissible and incompetent for the purpose suggested. We shall desire to ask that you get a properly certified copy.

[*Copy of assignment from Goodyear Shoe Machinery Company of Connecticut, to the Goodyear Shoe Machinery Company, of Maine, dated March 9, 1893, marked for identification "Plaintiff's Exhibit 225 for identification".*]

Mr. WEBSTER. The petitioner offers copies of all the patents referred to in the assignment.

Mr. CHOATE. We make the same objection as to the previous exhibit. We assume they are offered for the same purpose.

Mr. WEBSTER. They are offered for any purpose that they are admissible for, the same as the assignment was, to support the Government's case.

Mr. CHOATE. Note that we also object because they are not offered for any purpose within the scope of the order.

[*Copies of patents referred to in the assignment, in one binder, marked "Plaintiff's Exhibit 226".*]

Mr. WEBSTER. I will now ask Mr. Jones to take the stand.

## DEPOSITION OF CHARLES H. JONES.

*Direct Examination by ALLEN WEBSTER, Esq., of Counsel for Complainant.*

*Int.* 1. Your name is Charles H. Jones and you are the same Charles H. Jones that has heretofore testified in this case?

*Ans.* Yes, sir.

*Int.* 2. You are, I believe, president of the Commonwealth Shoe & Leather Company?

*Ans.* Yes, sir.

*Int.* 3. Were you connected with the Commonwealth Shoe & Leather Company in January of 1899?

*Ans.* Yes, sir.

*Int.* 4. And for how long previous to that date were you connected with that company?

*Ans.* Since 1884,— the formation of the company.

*Int.* 5. Have you any personal knowledge as to whether the Goodyear Shoe Machinery Company were putting out machines early in 1899?

*Ans.* Yes, sir.

*Int.* 6. State what machines, to your knowledge, the Goodyear Shoe Machinery Company were putting out early in 1899.

*Ans.* They were putting out the welter and turn shoe machine, the rapid stitching machine — the rapid lockstitch stitching machine, it was called, I think ; the rough rounding and channeling machine, outsole channelers, insole channelers, welt groovers and bevelers, lip turners, bobbin winders, and various other secondary machines, — auxiliary machines.

Mr. CHOATE. Please note our objection to that statement.

*Int.* 7. State, if you know, whether the Goodyear Shoe Machinery Company were putting out the machines referred to by you early in 1899, claiming the same to be protected by patents.

Mr. CHOATE. We object to the form of the question, and object to it also because it is leading and suggestive, and also because it is immaterial, irrelevant and inadmissible.

*Ans.* Yes, sir ; they were.

*Int.* 8. State the foundation for your reply to the last question.

Mr. CHOATE. Note the same objections.

*Ans.* We were dealing with them continuously at that time. I find on our books during December, 1898, and January, 1899, numerous entries showing the transactions we were having with them at the time. We have had their leases before that time and since, and have been dealing with them continuously since 1884.

Mr. CHOATE. Please note our objection to the answer as not responsive to the question.

*Int.* 9. Have you, and can you produce, a lease agreement between the Goodyear Shoe Machinery Company and the Commonwealth Shoe & Leather Company dated approximately the date inquired about?

*Ans.* February, 1899. It is not a lease; it is a bill.

[*Produces a paper.*]

*Int.* 10. Kindly read the same that it may be entered on the record.

*Ans.* "Boston, February 14, 1899. Commonwealth Shoe & Leather Company, Marlboro, in account with the Goodyear & McKay Sewing Machine Company, 158 Summer Street. Subject to all the terms and conditions of any agreement or licenses between the said parties. For a lease and license of the following machinery:

One Good Lockstitch Machine, No. 223,  
One Cop Winder, No. 181,  
One Outsole Channeler No. 953,  
One Three Foot Counter-shaft, all \$350.

Terms, Cash, April 24, 1899. Shipped by Dart & Company's Express."

Mr. CHOATE. Please note our objection to the answer as not responsive to the question, as incompetent, inadmissible and immaterial.

[*Paper dated February 14, 1899, marked "Plaintiff's Exhibit 227".*]

Mr. CHOATE. And I ask to have noted on the record that the exhibit produced by the witness is not a bill of the Goodyear Shoe Machinery Company but purports to be a bill of the Goodyear & McKay Sewing Machine Company.

*Int.* 11. Mr. Jones, kindly state whether the bill you have produced and read into the record is the bill of the Goodyear Shoe Machinery Company?

Mr. CHOATE. Please note our objection to the question as seeking to contradict a written document by oral evidence; as incompetent, immaterial and inadmissible.

*Ans.* That is a bill from the same company that furnished us all our Goodyear machinery. I do not know the title of the company or when it was changed, if it has been changed. It was the company that we procured all our machinery from.

Mr. CHOATE. Note an objection to the answer as not responsive to the question.

*Int.* 12. Have you in your possession, and can you produce, a lease agreement between the Goodyear Shoe Machinery Company and the Commonwealth Shoe & Leather Company?

Mr. CHOATE. Do you fix any time?

Mr. WEBSTER. I will ask him the time when he produces it.

*Ans.* I have no leases with me. I have—

Mr. CHOATE. That is all you are asked.

The WITNESS. I beg your pardon. I have a lease; yes, sir.

*Int.* 13. Kindly give the date.

*Ans.* The first day of February, 1893. I have others. The first of February, 1893; the third day of January, 1895; the first day of March, 1892. I think those are all the leases I have here. I would not be sure. Here is one more: the fifth day of April, 1898; the eighth day of January, 1896; the twenty-third day of March, 1898; the eighteenth day of May, 1899; the twenty-first day of January, 1898.

*Int.* 14. Kindly produce the lease agreements called for dated April, 1898, and May 18, 1899.

*Ans.* [Witness produces papers.] Here is March, 1898. I do not know that you want that also.

Mr. WEBSTER. Do you admit the execution?

Mr. CHOATE. For the purposes of this case, waiving any other rights, we will admit the execution.

Mr. WEBSTER. The lease agreement referred to by the witness, dated April 5, 1898, is offered in evidence.

[*Agreement dated April 5, 1898, introduced in evidence and marked "Plaintiff's Exhibit 228".*]

Mr. CHOATE. Please note our objection to the exhibit as not containing any allegation in the scope of the order or included in the bill, and as incompetent, inadmissible and immaterial.

Mr. WEBSTER. Counsel for the Government respectfully calls attention to the recital in the leases of the patents.

The lease agreement produced by the witness, dated May 18, 1899, is offered in evidence.

[*Agreement dated May 18, 1899, introduced in evidence and marked "Plaintiff's Exhibit 229".*]

Mr. CHOATE. We ask that the same objection be noted as to the previous exhibit.

Mr. WEBSTER. Counsel for the petitioner calls particular attention to the recital in the lease agreements, reading as follows:—

"Whereas the lessor is the owner of or licensed under the several Letters Patent of the United States recited in the schedule following, namely, Schedule of Patents No. 240,307, dated April 19, 1881:—

No. 249,279, dated November 8, 1881;  
No. 253,156, dated January 31, 1882."

Mr. CHOATE. Why not have that copied in without reading it?

Mr. WEBSTER. That is agreeable to me.

Mr. CHOATE. Or simply state that you call attention to the list of patents?

Mr. WEBSTER. I do not call attention to all of them. I call attention to the particular ones down to and including No. 488,481, dated December 27, 1892.

Those are the leases of January instead of April.

The WITNESS. Here is the April 5th one.

Mr. CHOATE. The patents you call attention to are the ones that expired before 1899?

Mr. WEBSTER. They include patents dated December 19, 1893, No. 511,263.

[*Lease dated May 18, 1899, introduced in evidence and marked "Plaintiff's Exhibit 229".*]

*Int.* 15. Kindly state whether you have knowledge as to whether the Consolidated & McKay Lasting Machine Company were putting out machines on or about the early part of 1899.

*Ans.* Yes, sir; they were.

*Int.* 16. State what machines the Consolidated & McKay Lasting Machine Company were putting out at the time referred to by you.

*Ans.* The ones on which I have knowledge are the Chase lasting machine and the Consolidated hand-method lasting machine.

*Int.* 17. State, if you know, whether the Consolidated & McKay Lasting Machine Company were putting out those machines at that time under claims of protection under patent.

*Ans.* Yes, sir; they were.

Mr. CHOATE. Please note our objection to the question, the same as that which was noted to the same question when previously put as to Goodyear machines.

*Int.* 18. State your reason for the statement that they were putting out machines under claim that the same were patented.

*Ans.* They tendered us leases for signature containing the list of the patents which they claimed covered these machines.

*Int.* 19. Have you any written memoranda dated on or about January, 1899, containing a recital of a list of patents claimed by that company?

*Ans.* I have a lease agreement dated January 23, 1900, with such a list.

*Int.* 20. Kindly produce the same for examination. [*Witness produces paper.*] I call your attention to the fact that the paper produced by you does not seem to be executed.

*Ans.* No, sir; he did not sign it. I have one dated the 24th of March, 1900, that is signed, a duplicate of that.

*Int.* 21. Kindly produce it. [*Witness produces paper.*]

Mr. WEBSTER. Do you admit the execution, Mr. Choate?

Mr. CHOATE. Do you offer this for any other purpose except to show that the Consolidated & McKay Lasting Machine Company

was doing business on the date of this paper under a claim of patents on these machines?

Mr. WEBSTER. And before that, of course. At that date and before.

Mr. CHOATE. That is the purpose of it? Limited to that purpose, we will admit the execution of the paper.

Mr. WEBSTER. The petitioner offers in evidence the paper produced by the witness, license and rental lease from the Consolidated & McKay Lasting Machine Company to the Commonwealth Shoe & Leather Company.

[*License and rental lease, dated March 24, 1900, from Consolidated & McKay Lasting Machine Company to Commonwealth Shoe & Leather Company introduced in evidence, and marked "Plaintiff's Exhibit 230".*]

Mr. WEBSTER. I call attention to the following recital:—

"This license and rental lease agreement, made in duplicate the 24th day of March A. D. 1900, by and between the Consolidated & McKay Lasting Machine Company, a corporation incorporated under the laws of the State of Maine, Lessor and party of the first part, and Commonwealth Shoe and Leather Co. of Skowhegan, Maine, Licensee and party of the second part, Witnesseth:

Whereas, the Lessor is now the owner of the following Letters Patent of the United States relating to Lasting Machines or auxiliary machines for lasting to wit:

- No. 274,207, dated March 20, 1883,
- No. 281,306, dated July 17, 1883,
- No. 284,906, dated Sept. 11, 1883,
- No. 292,575, dated Jan. 29, 1884,
- No. 312,335, dated Feb. 17, 1885,
- No. 415,726, dated Nov. 26, 1889,
- No. 421,954, dated Feb. 25, 1890,
- No. 423,920, dated March 25, 1890,
- No. 423,921, dated March 25, 1890,
- No. 423,922, dated March 25, 1890,
- No. 423,937, dated March 25, 1890,
- No. 441,482, dated Nov. 25, 1890,
- No. 459,899, dated Sept. 22, 1891,
- No. 482,349, dated Sept. 13, 1892,
- No. 500,141, dated June 27, 1893,
- No. 510,972, dated Dec. 19, 1893,
- No. 510,973, dated Dec. 19, 1893,

No. 510,974, dated Dec. 19, 1893,  
No. 510,975, dated Dec. 19, 1893,  
No. 510,976, dated Dec. 19, 1893,  
No. 510,977, dated Dec. 19, 1893,  
No. 510,978, dated Dec. 19, 1893, . . . ”

Mr. CHOATE. Please note our objection to the introduction of this exhibit as not in support of any allegation within the scope of the order or in the bill; and that it is incompetent, inadmissible and immaterial.

*Int. 22.* Kindly state whether you have knowledge as to whether the McKay Shoe Machinery Company was putting out machines under claim of patent protection early in 1899, or at about that time.

Mr. CHOATE. Please note our objection to the question, the same as was noted to the previous similar question as to the Goodyear machines.

*Ans.* Yes, sir; they were.

*Int. 23.* State what machines were being so put out by the McKay Shoe Machinery Company at that time.

*Ans.* Heeling machines and heel compressing machines.

*Int. 24.* Have you in your possession and can you produce any written memoranda, signed by that company, indicating under what patents it claimed protection?

*Ans.* The leases we have read from the McKay & Bigelow Heeling Machine Association, but our account, the money we paid, was to the McKay Shoe Machinery Company.

Mr. CHOATE. Please note our objection to the answer as not responsive to the question.

*Int. 25.* Have you refreshed your recollection by reference to your books to ascertain what dealings you had with reference to machines received by your company from the McKay Shoe Machinery Company at or about the date referred to?

*Ans.* Yes, sir.

*Int. 26.* State the facts in reference to the matter inquired about.

Mr. CHOATE. Please note our objection to the question, which has no reference to any intelligible previous question calling for an answer.

*Ans.* I have a lease and license, No. 1731, from the McKay-Bigelow Heeling Machine Association, dated December 17, 1897, for American lightning nailing machines, twelve of them, and for two Fisher compressing machines. [Witness produces paper.]

Mr. CHOATE. Please note our objection to the answer as not responsive to the question, and not in support of any allegation within the scope of the order or the bill.

*Int. 27.* State whether, within your knowledge, the McKay-Bigelow Heeling Machine Association, or it, associated with the McKay Shoe Machinery Company, continued up to early in 1899 putting out machines of the type referred to in the paper produced by you.

Mr. CHOATE. Please note our objection to the question as incompetent, inadmissible, irrelevant and not within the scope of the order.

*Ans.* It did so continue, sir.

Mr. CHOATE. Please note our objection to the answer as not competent evidence of the fact.

[*Lease and license No. 1731, from the McKay-Bigelow Heeling Machine Association, lessors, dated December 17, 1897, to the Commonwealth Shoe & Leather Company, lessee, introduced in evidence and marked "Plaintiff's Exhibit 231".*]

Mr. WEBSTER. Mr. Choate, will you admit the execution, as you did before?

Mr. CHOATE. We will admit the execution for the purpose of this case, but object to the introduction of the exhibit as not proving any fact within the scope of the order and as incompetent, immaterial and inadmissible.

Mr. WEBSTER. Counsel for petitioner calls attention to the following recital in the lease and license No. 1731:—

"Whereas, The Lessors are engaged in the manufacture of shoe machinery, and devices to be used in connection therewith, and particularly machinery and devices useful in the manufacture of the heel portions of boots and shoes; and

Whereas, The Lessors, at great expense, have endeavored, and are constantly endeavoring to improve and render more useful, the machinery and devices manufactured by them, and are the owners

of the following Letters Patent of the United States for improvements and inventions relating to machinery and devices for the manufacture of shoes, viz.: —

- E. B. Allen, 310,488, Jan. 6, 1885 ;  
314,411, March 24, 1885 ;  
319,377, June 2, 1885 ;  
332,032, Dec. 8, 1885 ;  
332,984, Dec. 22, 1885 ;  
348,091, Aug. 24, 1886 ;  
348,092, Aug. 24, 1886 ;  
374,387, Dec. 6, 1887 ;  
374,885, Dec. 13, 1887 ;  
375,913, Jan. 3, 1888 ;  
377,284, 377,285, Jan. 31, 1888 ;  
378,859, March 6, 1888 ;  
384,343, June 12, 1888 ;  
384,734, June 19, 1888.
- C. H. Benjamin, 388,523, Aug. 28, 1888.
- H. Bond, 297,785, Feb. 5, 1884.
- E. Bourgeois, 277,207, May 8, 1883.
- C. H. Brown and A. B. McCoy, 477,098, June 14, 1892.
- C. W. Chase, 212,190, Feb. 11, 1879.
- T. P. Coombs, 391,124, Oct. 16, 1888.
- J. H. Cunningham, 381,493, April 17, 1888.
- A. E. Ellis, 388,544, Aug. 28, 1888.
- A. D. Elliott, 374,892, Dec. 13, 1887.
- A. D. Elliott and J. E. Fellows, Nov. 19, 1889.
- A. D. Elliott, 446,383, Feb. 10, 1891 ;  
510,012, Dec. 5, 1893.
- H. P. Fairfield, 224,005, Feb. 3, 1880 ;  
388,547, 388,548, Aug. 28, 1888 ;  
498,745, May 30, 1893 ;  
518,917, April 24, 1894.
- M. J. Ferren, 236,148, Jan. 4, 1881.
- M. Fifield, 261,696, July 25, 1882.
- E. Fisher, 246,945, Sept. 13, 1881 ;  
248,582, Oct. 25, 1881 ;  
248,582, Oct. 25, 1881 ;  
250,654, Dec. 13, 1881 ;  
258,905, June 6, 1882.
- J. F. Freeman and C. W. Glidden, 443,434, Dec. 23, 1890.
- C. W. Glidden, 217,866, July 29, 1879 ;  
217,867, July 29, 1871 ;  
224,011, 224,012, Feb. 3, 1880 ;  
278,426, May 29, 1883 ;

321,017, June 30, 1885 ;  
347,482, Aug. 17, 1886 ;  
350,051, Sept. 28, 1886 ;  
374,894, Dec. 13, 1887 ;  
377,300, Jan. 31, 1888 ;  
377,301, 377,302, Jan. 31, 1888 ;  
382,762, May 15, 1888 ;  
388,552, 388,578, Aug. 28, 1888 ;  
393,103, 393,104, Nov. 20, 1888 ;  
399,607, 399,608, March 12, 1889 ;  
402,435, April 30, 1899 ;  
399,608, March 12, 1889 ;  
402,435, April 30, 1889 ;  
403,747, May 21, 1889 ;  
408,173, July 3, 1889 ;  
409,637, Aug. 20, 1889 ;  
409,783, 410,086, 410,087, 410,088, 410,089 ;  
410,090, Aug. 27, 1889 ;  
410,358, Sept. 3, 1889 ;  
411,655, Sept. 24, 1889 ;  
414,040, Oct. 29, 1889 ;  
427,308, May 6, 1890 ;  
439,060, Oct. 21, 1890 ;  
454,428, June 16, 1891 ;  
457,462, Aug. 11, 1891 ;  
459,348, Sept. 8, 1891 ;  
464,196, Dec. 1, 1891 ;  
498,429, 498,513, May 30, 1893 ;  
500,486, June 27, 1893 ;  
502,667, 502,668, 502,669, Aug. 1, 1893 ;  
242,268, April 30, 1895.

Glidden and Elliott, 457,462, Aug. 11, 1891.

R. M. Harrison, 233,504, Oct. 19, 1880.

M. P. Harrigan, 386,538, July 24, 1888 ;

406,582, July 9, 1889.

Harrigan and Packard, 473,874, April 26, 1892.

John J. Heys, 530,046, Nov. 27, 1894.

T. P. King and F. S. Strong, 267,544, Oct. 24, 1882.

Horne and Henderson, 389,077, Sept. 4, 1888.

W. Manley, 322,945, July 28, 1885 ;

336,332, Feb. 16, 1886 ;

342,371, May 25, 1886 ;

374,416, 374,417, 374,418, 374,419, Dec. 6, 1887.

J. F. McMullett, 266,298, Oct. 24, 1882 ;

373,409, Nov. 15, 1887.

- J. L. Packard, 388,578, Aug. 28, 1888 ;  
413,959, Oct. 29, 1889 ;  
473,478, April 19, 1892.
- M. D. Phelan, 400,788, April 2, 1889.
- D. C. Pillsbury, 417,833, Dec. 24, 1889.
- A. E. Stirckler, 212,116, Feb. 11, 1879.
- E. A. Tripp, 406,183, 406,184, July 2, 1899.
- C. K. Wead, 477,093, June 14, 1892.
- A. H. Webster, 468,279, Feb. 2, 1892 ;  
483,293, Sept. 27, 1892 ;  
504,854, 502,854, 505,074, Sept. 12, 1893.
- H. W. Winter, 401,619, 401,620, 401,622, April 16, 1889 ;  
402,375, 402,376, April 30, 1889 ;  
447,744, March 3, 1891 ;  
448,310, March 17, 1891 ;  
501,555, July 18, 1893 ;  
505,043, Sept. 12, 1893.
- E. C. Wright, 340,690, April 27, 1886.
- Crocker, Sumner & Nash, 385,748, July 10, 1888 ;  
388,535, Aug. 28, 1888.
- J. H. Pope, 399,631, March 12, 1889 ;  
399,777, March 19, 1889 ;  
411,835, Oct. 1, 1889 ;  
446,885, Feb. 24, 1891.
- M. A. Tyler, 301,462, July 1, 1884 ;  
305,723, Sept. 23, 1884.
- Tyler & Merritt, 321,401, June 30, 1985 ;  
382,121, May 1, 1888.
- Tyler & Smith, 293,604, Feb. 12, 1884.
- A. K. Washburn, 389,994, Sept. 25, 1888.
- H. A. Henderson, 252,215, Jan. 10, 1882 ;  
259,687, June 30, 1882 ;  
316,894, April 28, 1885 ;  
10,588, 10,589, April 28, 1885 ;  
317,646, 317,647, May 12, 1885 ;  
332,798, Dec. 22, 1885.
- F. F. Raymond, 2d, 271,117, 271,118, Jan. 23, 1883 ;  
280,399, July 3, 1883 ;  
287,472, Oct. 30, 1883 ;  
289,857, 290,109, Dec. 11, 1883 ;  
315,458, 315,069, 315,070, April 7, 1885 ;  
316,177, April 21, 1885 ;  
316,661, 316,836, 316,827, April 28, 1885 ;  
317,199, May 5, 1885 ;  
317,672, 317,851, May 12, 1885 ;

318,134, May 19, 1885 ;  
319,124, June 2, 1885 ;  
321,530, 321,756, July 7, 1885 ;  
322,126, July 14, 1885 ;  
322,560, July 21, 1885 ;  
322,561, 322,562, July 21, 1885 ;  
325,271, 325,272, Sept. 1, 1885 ;  
326,150, Sept. 15, 1885 ;  
326,779, 326,780, 326,781, 326,782, Sept. 22, 1885 ;  
329,079, Oct. 27, 1885 ;  
329,951, 329,952, Nov. 10, 1885 ;  
331,441, Dec. 1, 1885 ;  
382,001, Dec. 8, 1885 ;  
335,241, 335,242, Feb. 2, 1886 ;  
340,358, April 20, 1886 ;  
341,169, May 4, 1886 ;  
341,689, May 11, 1886 ;  
342,039, May 18, 1886 ;  
342,461, May 25, 1886 ;  
342,929, June 1, 1886 ;  
343,339, June 8, 1886 ;  
343,728, June 15, 1886 ;  
344,136, June 22, 1886 ;  
344,499, June 29, 1886 ;  
344,985, July 6, 1886 ;  
345,449, July 13, 1886 ;  
345,920, July 20, 1886 ;  
346,124, 346,125, July 27, 1886 ;  
346,607, Aug. 3, 1886 ;  
347,061, 347,062, 347,063, Aug. 10, 1886 ;  
347,514, Aug. 17, 1886 ;  
347,960, Aug. 24, 1886 ;  
348,689, Sept. 7, 1886 ;  
353,883, Dec. 7, 1886 ;  
354,227, Dec. 14, 1886 ;  
354,655, Dec. 21, 1886 ;  
355,027, Dec. 28, 1886 ;  
355,556, Jan. 4, 1887 ;  
355,839, 355,840, Jan. 11, 1886 ;  
356,209, Jan. 18, 1887 ;  
356,549, 356,550, 356,551, Jan. 25, 1887 ;  
356,552, 356,553, 356,554, Jan. 25, 1887 ;  
356,890, Feb. 1, 1887 ;  
357,335, Feb. 8, 1887 ;  
357,735, Feb. 15, 1887 ;

359,298, Feb. 22, 1887;  
358,695, March 1, 1887;  
368,006, Aug. 9, 1887;  
376,208, Jan. 10, 1888;  
376,754, 376,908, Jan. 24, 1888;  
377,172, Jan. 1, 1888;  
377,577, Feb. 7, 1888;  
377,958, Feb. 14, 1888;  
378,216, Feb. 21, 1888;  
378,617, Feb. 28, 1888;  
379,029, March 6, 1888;  
379,330, March 13, 1888;  
379,810, March 20, 1888;  
380,133, March 27, 1888;  
380,596, April 3, 1888;  
380,818, April 10, 1888;  
381,280, April 17, 1888;  
383,911, June 5, 1888;  
385,960, July 10, 1888;  
386,656, July 24, 1888;  
394,298, Dec. 11, 1888;  
394,609, 394,610, Dec. 18, 1888;  
398,846, March 5, 1889;  
405,598, June 18, 1889;  
408,895, Aug. 13, 1889;  
409,372, Aug. 20, 1889;  
410,194, 410,195, 410,196, Sept. 3, 1889;  
410,675, 410,676, 410,677, Sept. 10, 1889;  
412,414, Oct. 1889;  
412,896, Oct. 15, 1889;  
413,553, 413,554, 413,555, Oct. 22, 1889;  
413,963, 413,964, Oct. 29, 1889;  
414,448, 414,582, Nov. 5, 1889;  
414,952, Nov. 12, 1889;  
415,559, Nov. 19, 1889;  
415,560, Nov. 19, 1889;  
461,448, 461,510, Oct. 20, 1891;  
464,165, 464,255, Dec. 1, 1891;  
464,991, 465,029, Dec. 15, 1891;  
467,237, Jan. 19, 1892;  
467,522, Jan. 26, 1892;  
468,957, Jan. 16, 1892;  
474,146, May 3, 1892;  
474,407, 474,408, May 10, 1892;  
475,001, 474,858, May 17, 1892;

475,417, May 24, 1892;  
476,303, 476,307, June 7, 1892;  
479,142, July 19, 1892;  
480,415, Aug. 9, 1892;  
480,741, Aug. 16, 1892;  
528,805, Nov. 6, 1894;  
531,644, 531,645, Jan. 1, 1895.

Raymond & Wheeler, 280,861, July 10, 1883.  
G. T. Demary, 320,050, June 16, 1885;  
321,696, July 7, 1885;  
342,501, May 25, 1886;  
343,703, June 15, 1886;  
474,335, May 3, 1892.

Towns & Raymond, 346,137, July 27, 1886.

J. B. Gardner, 354,125, Dec. 4, 1886;  
360,580, April 5, 1887.

J. W. Soule, 368,248, April 16, 1887.

C. C. Small, 375,209, Dec. 20, 1887;  
376,049, Jan. 3, 1888;  
413,973, Oct. 29, 1889;  
461,853, Oct. 27, 1891;  
467,242, Jan. 19, 1892.

E. E. Orr, 375,458, Dec. 27, 1887.

J. R. Prouty, 383,907, 383,908, 383,909, June 5, 1888;  
515,175, Nov. 12, 1889.

James W. Carver, 401,131, April 9, 1889.

Benjamin & Simmons, 503,895, Aug. 22, 1893. . . ."

*Int.* 28. Kindly state whether you have knowledge as to whether the Eppler Welt Machine Company was putting out machines early in 1899.

*Ans.* Yes, sir; it was.

*Int.* 29. Kindly state what machines, to your knowledge, the Eppler Welt Machine Company were putting out at that time.

*Ans.* Machines for sewing welt and machines for stitching the outer soles.

*Int.* 30. Have you knowledge or memorandum tending to show whether the Eppler Welt Machine Company were at that time putting out machines under claims of patent protection?

*Ans.* I have no memoranda. I have knowledge, but no memoranda.

*Int.* 31. You may state what you have knowledge of.

*Ans.* I examined the machinery, and its agent referred to patents which did not conflict with patents of the Goodyear Company and which effectively protected his machine.

Mr. CHOATE. Please note our objection to the answer as not responsive to the question, as stating hearsay, and as incompetent, inadmissible, irrelevant and immaterial.

*Int.* 32. State whether you have knowledge as to whether the Davey Pegging Machine Company were putting out machines early in 1899 under the claim of patent protection.

*Ans.* They were. I cannot fix the date exactly. It was prior to 1899, but I cannot state exactly the date.

*Int.* 33. State what machines were being put out by the Davey Pegging Machine Company on or about the early part of 1899.

*Ans.* A machine for pegging on a horn. We have only our book records of transactions with them. Our ledger shows the charges and the payments; we had no lease. It was a purchased machine.

*Int.* 34. State whether or not the Commonwealth Shoe & Leather Company purchased any machine or machines of the Davey Pegging Machine Company; and, if so, what machines, and when the same were purchased.

*Ans.* The Commonwealth Company purchased a pegging machine, for pegging on a horn, of the Davey Pegging Machine Company, prior to January, 1899. I cannot tell exactly the date. I have no record.

*Int.* 35. State whether that machine is in use at the present time.

*Ans.* It is.

*Int.* 36. Now, referring particularly to welting machines procured as stated by you of the Goodyear Shoe Machinery Company, kindly state as nearly as you are able when the first welting machine was procured by you or your company from that company.

*Ans.* I think in the year 1884.

*Int.* 37. State whether that particular machine is in use today.

*Ans.* I think not, sir. I do not find any lease of it here, and I don't think it is.

*Int.* 38. State for how long a time any one particular welting machine procured by the Commonwealth Shoe & Leather Company from the Goodyear Shoe Machinery Company has been, to your knowledge, in operation.

Mr. CHOATE. Please note our objection to the question as not within the scope of the order, as incompetent, inadmissible, irrelevant and immaterial.

*Ans.* I find one here dated May, 1896. There are some older than that, I know. I am sure that we have had some of the machines in use nineteen years.

Mr. CHOATE. Please note my objection to the answer as not responsive to the question, not in support of any allegation within the scope of the order; inadmissible, irrelevant, immaterial and incompetent.

*Int.* 39. Kindly state whether you caused any of the machines in your factory at Whitman to be photographed recently.

*Ans.* I did, sir.

*Int.* 40. And what machines?

*Ans.* The welt machine, the rough-rounding machine, the channelling machine and leveler.

*Int.* 41. When were these photographs made?

*Ans.* The first part of the week.

*Int.* 42. Will you kindly produce the photographs and state what they refer to?

*Ans.* Photograph of our welt machine, No. 228. That I found the lease for a moment ago. That is dated May 28, 1896.

Mr. WEBSTER. I offer this, being a photograph of welting machine referred to in transfer agreement dated May 21, 1896.

[*Photograph of welting machine introduced in evidence and marked "Plaintiff's Exhibit 232".*]

*Int.* 43. Kindly state whether the welting machine a photograph of which has just been produced by you had any markings upon it; and, if so, what they were.

*Ans.* It had two name plates: one of them "No. blank, welt and turn shoe machine, patented, the property of the Goodyear Shoe Machinery Company, Lessor, Boston, Mass."; the other name

plate read: "The property of the United Shoe Machinery Company, Lessor, Goodyear Department, Goodyear welt and turn shoe machine, No. 228."

*Int.* 44. Kindly produce the next photograph, and state what it has reference to.

*Ans.* The next photograph is a Universal rough-rounding and channeling machine, No. 31.

[*Photograph of Universal rough-rounding and channeling machine introduced in evidence and marked "Plaintiff's Exhibit 233".*]

The WITNESS. That is included in lease of January 8, 1896.

*Int.* 45. Kindly state whether the Universal rough rounder of which Plaintiff's Exhibit 233 is a photograph is in use at the present time?

*Ans.* It is.

*Int.* 46. Kindly produce the next photograph referred to by you.

*Ans.* The next photograph is automatic leveler, No. 35.

[*Photograph of automatic leveler introduced in evidence and marked "Plaintiff's Exhibit 234".*]

*Int.* 47. Kindly produce the next photograph you have made reference to.

*Ans.* This is of an insole channeling machine, No. 2072.

*Int.* 48. Procured when and of whom?

*Ans.* Procured of the Goodyear Shoe Machinery Company prior to January, 1899.

*Int.* 49. Give the date, if you are able, and state whether it was procured under lease or otherwise.

*Ans.* I should be able if I had time enough. I may not have the lease. I did not know that you wanted the date today.

*Int.* 50. Kindly look it up so that you may testify tomorrow.

*Ans.* I will, sir.

[*Photograph of insole channeling machine No. 2072 introduced in evidence and marked "Plaintiff's Exhibit 235".*]

Mr. WEBSTER. I suggest that we adjourn and get those dates and get those leases.

Mr. CHOATE. Can't you use up the rest of the time?

Mr. WEBSTER. I prefer, saving my rights, to allow you to pro-

ceed with your cross-examination. As at present advised, I do not think of anything further to ask this witness.

Mr. CHOATE. That is, you have finished your examination?

Mr. WEBSTER. As at present advised. I may think of something further between now and tomorrow morning that I shall want to ask. I am quite content you should use up the time in cross-examining if you desire.

*Cross Examination by CHARLES F. CHOATE, Esq., of Counsel for Defendants.*

*Cross-Int.* 51. Mr. Jones, who selected those machines to be photographed?

*Ans.* I did.

*Cross-Int.* 52. At whose request?

*Ans.* At the request of the Government.

*Cross-Int.* 53. What was the request?

*Ans.* That I photograph certain machines. I don't know as I can tell you exactly, but my recollection is that I was to cause photographs to be taken of certain machines which were bought prior to the formation of the United Machine Company.

*Cross-Int.* 54. You do not mean bought?

*Ans.* I mean leased, procured.

*Cross-Int.* 55. Any machines that you had acquired, or machines that you had acquired at a certain time?

*Ans.* Machines that we had acquired prior to the formation of the United Company.

*Cross-Int.* 56. Do you mean at any time prior?

*Ans.* As I remember it. I do not remember that there was any specification. I do not know that there was any specification as to time.

*Cross-Int.* 57. That is, to photograph any machines that you had acquired prior to February, 1899?

*Ans.* Of these different companies; yes, sir.

*Cross-Int.* 58. Did you have anything to do with the procuring of the Davey pegging machine?

*Ans.* No, sir.

*Cross-Int.* 59. Which you say your company had?

*Ans.* No, sir.

*Cross-Int.* 60. You have no idea when it was acquired?

*Ans.* I have as much idea as any of our people. We cannot, any of us, remember just the time; we talked it over. We cannot remember. We have no lease or anything that gives us the date. It was prior to 1899.

*Cross-Int.* 61. You speak of it as being purchased. Have you any knowledge whatever of the transaction by which it came into your possession?

*Ans.* Our treasurer tells us at the time he purchased it —

*Cross-Int.* 62. No.

*Ans.* I did not do it myself, if you mean that.

*Cross-Int.* 63. I do not want your statement of what somebody else told you.

Mr. CHOATE. I ask that that be stricken out.

*Cross-Int.* 64. Have you any knowledge of the transaction by which it came into your possession?

*Ans.* No personal — I did not do it myself. I have the same knowledge of it as I should have if our treasurer buys leather —

*Cross-Int.* 65. Have you made any examination of your books to ascertain the date?

*Ans.* I have.

*Cross-Int.* 66. Did you find anything to show when it was acquired?

*Ans.* I have not as yet. I found a ledger with the date of January, 1899, where was an entry of supplies purchased. I did not go back of that. I do not know whether I can find an earlier ledger or not.

*Cross-Int.* 67. You expect to be here tomorrow? I wish you would look up your books as far back as you have occasion to, to ascertain if you can find anything with reference to any purchase of that machine.

*Ans.* It would be quite impossible for me to find anything by that time, because for that remote time it is rather difficult, and the papers are not easily accessible.

*Cross-Int.* 68. You mean the transaction may have been any time between 1884 and 1899?

*Ans.* No; I do not mean that.

*Cross-Int.* 69. Between what dates?

*Ans.* For a long time after 1884 I was in the factory constantly. We did not use the Davey pegger.

*Cross-Int.* 70. Between what times approximately?

*Ans.* I should say my best judgment would be it would be between 1895 and 1899.

*Cross-Int.* 71. Please examine your books between 1895 and 1899 and see if you find any record of any purchase of the Davey pegging machine.

*Ans.* I will. If I can find the books I will examine them, certainly.

*Cross-Int.* 72. Was there any name on the machine?

*Ans.* On the Davey pegger?

*Cross-Int.* 73. Yes.

*Ans.* I have not examined it with that in mind.

*Cross-Int.* 74. Will you examine it and ascertain if there is any?

*Ans.* Yes, sir.

Mr. CHOATE. That is all.

[*Adjourned to 10 A. M., Friday, August 15, 1913.*]

BOSTON, MASS., August 15, 1913.

*Direct Examination resumed by Mr. WEBSTER.*

*Int.* 75. Did I ask you about a certain date?

*Ans.* Yes, about a date on a channeling machine.

*Int.* 76. Do you recollect where that is?

*Ans.* The date is in a lease which Mr. Keliher has, and I have not been able to get hold of it.

*Int.* 77. Then you can't give it this morning?

*Ans.* No.

*Int.* 78. Is there anything else?

*Ans.* Mr. Choate called for a memorandum in relation to the Davey pegger. I have made further examination and will be glad to state that, if this is the time.

*Cross Examination resumed by Mr. CHOATE.*

*Cross-Int.* 79. Have you obtained any information as to the time when your company acquired the Davey pegger?

*Ans.* I examined the ledger previous to the one I referred to in my testimony, and I find a credit to John F. Davey on July 3, 1895, machinery \$300, and that item was paid for on August 29, 1895, and I believe that that was the pegging machine in question. But I have no bill for it and only the ledger entry, so I cannot say any further. I have written to a man who was cognizant of the matter, who was employed by us, but I have no answer of course, and I do not know whether I shall be able to get any further information or not.

*Cross-Int.* 80. So your best information is, from that investigation, that in July, 1895, the Commonwealth Shoe Company bought a pegger of John F. Davey?

*Ans.* Yes, sir.

*Cross-Int.* 81. And that is the one which you testified about yesterday?

*Ans.* Yes, sir.

*Cross-Int.* 82. So you would want to correct your statement, would you not, that it was bought of the Davey Pegging Machine Company? If it was bought of anybody, it was bought of John F. Davey, to whom the money was paid, wasn't it?

*Ans.* Exactly. At the time referred to in my statement yesterday, January, 1899, the account was in the name of the Davey Pegging Machine Company. On this previous ledger I find the name of John F. Davey crossed out, and the Davey Pegging Machine Company inserted in its place, or following it.

*Cross-Int.* 83. It would seem to indicate that the Davey Pegging Machine Company was not in existence at the time you got the machine?

*Ans.* It would seem to indicate that John F. Davey did the business, and was succeeded by the Davey Pegging Machine Company.

*Cross-Int.* 84. And that one transaction is all the knowledge

that you have about who put out or marketed the Davey Pegging Machine prior to 1899?

*Ans.* Oh, no. We were constant —

*Cross-Int.* 85. Pardon me. Have you personal knowledge of acquiring any other pegging machines by your company than the one of which you testified?

*Ans.* No, sir.

*Cross-Int.* 86. Did you look up any other matter yesterday for me?

*Ans.* I don't think so. I don't recollect anything else.

Mr. CHOATE. That is all.

*Direct Examination resumed by Mr. WEBSTER.*

*Int.* 87. You were asked in cross-examination yesterday as to your knowledge about the putting out of these pegging machines. Kindly state what knowledge you had about the Davey Pegging Machine Company putting out pegging machines in 1899 or about that time.

Mr. CHOATE. Please note my objection to the question as being a subject which was inquired about on direct examination and not opened again on redirect examination.

*Ans.* The business done by John F. Davey was continued by the Davey Pegging Machine Company and we were in constant dealing with them, and the Davey Pegging Machine Company offered us improvements on our machines some time prior to 1899, — shortly prior to 1899, I think.

Mr. WEBSTER. I inadvertently omitted to have the catalogue which is put in as Plaintiff's Exhibit No. 220 identified, and I pray the indulgence of the court and counsel for that purpose.

*Int.* 88. I will ask you to kindly examine the book I now hand you [*Exhibit 220*], the same being marked "Plaintiff's Exhibit 220", and ask you to state what it is.

Mr. CHOATE. Please note our objection to the question, as it does not appear that Mr. Jones ever had any connection with the company which it is claimed issued the catalogue, or that he had any

personal knowledge of the issuance of the catalogue whatever, or that he has ever seen the paper before.

*Ans.* This is like a catalogue that we had which we received from this company —

**Mr. CHOATE.** Which company?

**The WITNESS.** The Goodyear Shoe Machinery Company.

*Ans. [resumed:]* — and used in our business for several years.

**Mr. CHOATE.** Please note our objection to the answer as not being responsive to the question, and request that it be stricken out.

**Mr. WEBSTER.** That is all I think of now, Mr. Choate, to inquire of this witness at the present time.

*Cross Examination resumed by Mr. CHOATE.*

*Cross-Int.* 89. Mr. Jones, do you know whether the pegging machines, if any, which were put out by the Davey Pegging Machine Company prior to 1899 were in all respects similar to the machine which you have testified your company obtained from John F. Davey?

*Ans.* I don't think that they were in all respects similar. I think improvements were added to the machine brought out by the Davey Pegging Machine Company.

**Mr. CHOATE.** That's all.

**Mr. WEBSTER.** As tending to show that the Davey Pegging Machine Company were putting out machines claimed to be built under patents, the petitioner offers in evidence lease and license No. 186, between the Davey Pegging Machine Company and Selz, Schwab & Company, dated March 10, 1899, and calls particular attention to the recital therein, as follows:—

“Whereas the lessor is the owner of the following described Letters Patent of the United States, namely, No. 414,501, Nov. 5, 1889, to John F. Davey, No. 504,311, August 29, 1893, to John F. Davey.”

[*Lease and license No. 186, between Davey Pegging Machine Company and Selz, Schwab & Company, dated March 10, 1899, offered in evidence and marked “Plaintiff’s Exhibit 236”.*]

**Mr. CHOATE.** Please note the defendants' objection to the intro-

duction of that paper as not tending to support any allegation which is within the scope of the order, or within the bill, and as not tending to sustain the proposition for which it is offered.

Mr. WEBSTER. Do you admit the execution?

Mr. CHOATE. For the purposes of this case we will admit of the paper's execution.

Mr. WEBSTER. In support of the petitioner's allegation that the Consolidated & McKay Lasting Machine Company were putting out machines claimed to be protected by Letters Patent early in 1899, petitioner offers license and rental lease No. 58 G, dated January 28, 1899, between the Consolidated & McKay Lasting Machine Company and R. H. Long Shoe Manufacturing Company, and calls particular attention to the patents therein enumerated as follows:—

"274,207, dated March 20, 1883,  
281,306, dated July 17, 1883,  
284,906, dated Sept. 11, 1883,  
292,575, dated Jan. 29, 1884,  
312,335, dated Feb. 17, 1885,  
415,726, dated Nov. 26, 1889,  
421,954, dated Feb. 25, 1890,  
423,920, dated March 25, 1890,  
423,921, dated March 25, 1890,  
423,922, dated March 25, 1890,  
423,937, dated March 25, 1890,  
441,482, dated Nov. 25, 1890,  
459,899, dated Sept. 22, 1891,  
482,349, dated Sept. 13, 1892,  
500,141, dated June 27, 1893,  
510,972, dated Dec. 19, 1893,  
510,973, dated Dec. 19, 1893,  
510,974, dated Dec. 19, 1893,  
510,975, dated Dec. 19, 1893,  
510,976, dated Dec. 19, 1893,  
510,977, dated Dec. 19, 1893,  
510,978, dated Dec. 19, 1893,  
518,933, dated April 24, 1894,  
523,939, dated July 31, 1894,"—

copies of which patents are to be produced and introduced herein.

[*License and rental lease No. 58 G, Consolidated & McKay Last-*

*ing Machine Company to R. H. Long Shoe Manufacturing Company, Springfield, Massachusetts, dated January 28, 1899, introduced in evidence and marked "Plaintiff's Exhibit 237".]*

Mr. CHOATE. We admit the execution for the purposes of this case.

Mr. WEBSTER. In support of the petitioner's allegation that the Consolidated & McKay Lasting Machine Company put out machines early in 1899 claimed to be protected by Letters Patent, the petitioner offers in evidence the license and rental lease between the Consolidated & McKay Lasting Machine Company and Selz, Schwab & Company, dated December 17, 1898, and calls particular attention to the patents therein recited, of which patent copies will hereafter be produced and put in evidence, as follows: —

"319,784, dated June 9, 1885;  
337,662, dated March 9, 1886;  
337,924, dated March 16, 1886;  
337,925, dated March 16, 1886;  
338,930, dated March 30, 1886;  
340,860, dated April 27, 1886;  
356,619, dated January 25, 1887;  
356,620, dated January 25, 1887;  
363,283, dated May 17, 1887;  
364,088, dated May 31, 1887;  
376,368, dated January 10, 1888;  
391,688, dated October 23, 1888;  
477,788, dated June 28, 1892;  
477,789, dated June 28, 1892;  
478,501, dated July 5, 1892;  
483,375, dated September 27, 1892."

In connection with this license and rental lease the petitioner offers memorandum attached thereto, dated March 11, 1899, reading as follows: "Boston, Mass., March 11th, 1899."

Mr. CHOATE. We do not object to that, but we think it would be convenient as you refer to those papers if you should state what they are leases of; don't you think so?

Mr. WEBSTER. So many have gone in without it that I do not suppose it would be of any advantage now. I will read the memorandum.

"Boston, Mass., March 11th 1899.

To Messrs. Selz, Schwab & Co. Chicago, Ill.

Gentlemen :— Enclosed please find your copies of the lease with signatures completed. Yours very truly,

Chase Dept.

CONSOLIDATED & MCKAY LASTING MCH. CO.

R."

I also call attention to a memorandum attached dated Boston, Mass., March 17, 1899, reading as follows :—

"To Messrs. Selz, Schwab & Co., Chicago, Ill.

Gentlemen :— Enclosed please find your copy of the lease with signatures completed. Yours very truly,

Chase Dept.

CONSOLIDATED & MCKAY LASTING MCH. CO."

[*License and rental lease, dated December 17, 1896, between Consolidated & McKay Lasting Machine Company and Selz, Schwab & Company, with two letters thereto attached as above stated, introduced in evidence and marked "Plaintiff's Exhibit 238".*]

Mr. WEBSTER. I very much regret the illness of Mr. Chapman. Mr. Gregg is to see Mr. Chapman in New York today and communicate with me at once, and he hopes he will be able to testify by the middle or latter part of next week. Under the circumstances, I do not see how I can proceed further until the middle or latter part of next week.

Mr. CHOATE. You will advise us as soon as you can when you can go ahead, will you?

Mr. WEBSTER. Yes ; just as soon as I find out what I can do, I will notify you promptly and give you all the notice in advance possible.

Mr. CHOATE. You will not forget, will you, that we want to be away between the 9th of September and the 1st of October?

Mr. WEBSTER. Now, Mr. Keliher spoke to me about that, and I told him to say to you that it was impossible for me personally to agree to any extension of that kind ; that personally I was perfectly agreeable. I was compelled to refer the matter to Mr. Gregg. I will confer with Mr. Gregg at the first opportunity. If it is within my power, I will be only too glad to accommodate you.

Mr. CHOATE. You perhaps notice that we have acquiesced in all your postponements?

Mr. WEBSTER. Yes. You have been fair about it.

[*Signature waived.*]

Attest: CHARLES K. DARLING, *Special Examiner.*

[*Adjourned subject to notice from counsel for the Government.*]

BOSTON, MASS., August 25, 1913.

Mr. WEBSTER. The petitioner now offers in evidence a certified copy of the assignment from the Goodyear Shoe Machinery Company, of Connecticut, to the Goodyear Shoe Machinery Company, of Maine, to take the place of the uncertified copy put in for identification as Plaintiff's Exhibit 225, and requests leave to withdraw the copy put in for identification and substitute the certified copy, and requests that the same be marked "Plaintiff's Exhibit 225".

Mr. CHOATE. There is no objection to that.

[*Certified copy of assignment from Goodyear Shoe Machinery Company, of Connecticut, to the Goodyear Shoe Machinery Company, of Maine, dated March 9, 1893, introduced in evidence and marked "Plaintiff's Exhibit 225".*]

Mr. WEBSTER. The petitioner offers in evidence group of twenty-four patents to which particular attention was called at the time of the introduction of Plaintiff's Exhibit 237, the same being patents to which attention was called in lease between the Consolidated & McKay Lasting Machine Company and the R. H. Long Shoe Manufacturing Company, said lease being dated January 28, 1899, said copies of patents comprising the following:—

Patent to J. E. Matzeliger, lasting machine, No. 274,207, dated March 20, 1883;

Patent to J. R. Scott, lasting machine for boots and shoes, No. 281,306, dated July 17, 1883;

Patent to J. R. Scott, machine for lasting boots and shoes, No. 284,906, dated September 11, 1883;

Patent to A. W. Pearson, lasting machine, No. 292,575, dated January 29, 1884;

Patent to C. Danceel, machine for lasting boots and shoes, No. 312,335, dated February 17, 1885;

Patent to J. E. Matzeliger, mechanism for distributing tacks, nails, etc., No. 415,726, dated November 26, 1889;

Patent to J. E. Matzeliger, nailing machine, No. 421,954, February 25, 1890;

Patent to Gooding et al., nail and tack driving machine, No. 423,920, dated March 25, 1890;

Patent to Gooding et al., pegging machine, No. 423,921, dated March 25, 1890;

Patent to Gooding et al., lasting machine, No. 423,922, dated March 25, 1890;

Patent to J. E. Matzeliger, tack separating and distributing mechanism, No. 423,937, March 25, 1890;

Patent to Gooding et al., nail driving machine, 441,482, November 25, 1890;

Patent to Matzeliger, lasting machine, 459,899, September 22, 1891; \*

Patent to Frechette, last machine, 482,349, September 13, 1892; Ladd, lasting machine, 500,141, June 27, 1893;

Ladd, starting and stopping mechanism for lasting machines, 510,972, December 19, 1893;

Ladd, lasting machine, 510,973, December 19, 1893;

Ladd, lasting machine, 510,974, December 19, 1893;

Ladd, lasting machine, 510,975, December 19, 1893;

Ladd, tacking machine, 510,976, December 19, 1893;

Ladd, lasting machine, 510,977, December 19, 1893;

Ladd, tack separating and feeding mechanism, 510,978, December 19, 1893;

Wheeler, tack distributor, 518,933, April 24, 1894;

Ladd, lasting machine, 523,939, July 31, 1894.

Mr. CHOATE. Are those all the patents mentioned in the lease, or only part of them?

Mr. WEBSTER. Only part of them, I think.

[*Group of patents introduced in evidence and marked "Plaintiff's Exhibit 239".*]

Mr. WEBSTER. Petitioner offers in evidence lease and license, former number 1593, new number 1785, between James W. Brooks, principal trustee, and John Brooks, associated trustee for the McKay-Bigelow Heeling Machine Association, lessors, and Selz, Schwab & Company, lessee, dated March 21, 1898, and calls particular attention to the patents therein referred to, copies of which patents will be offered in evidence as soon as the same are procured.

Mr. CHOATE. This is only for the purpose of showing that the McKay Shoe Machinery Company was doing business under a claim of patents prior to 1899?

Mr. WEBSTER. Yes. And in connection therewith the petitioner offers letter dated November 2, 1898, reading as follows:—

"Office of the  
MCKAY SHOE MACHINERY COMPANY,  
No. 76 Lincoln Street,

Heeling Department. Boston, November 2nd, 1898.  
Mess. Selz, Schwab & Co., Chicago, Ill.,

Gentlemen:—Will you kindly number the lease sent you for the compressor #34 and Mayo rapid nailer #2555 at Joliet, which is now numbered #1593, to #1785, and greatly oblige?

Dic.

Yours truly,  
MCKAY SHOE MACHINERY CO."

[*Lease and license No. 1785 from James W. Brooks, principal trustee, and John Brooks, associated trustee for the McKay-Bigelow Heeling Machine Association, lessors, to Selz, Schwab & Company, lessee, dated March 21, 1898, with letter of November 2, 1898, attached thereto marked "Plaintiff's Exhibit 240".*]

Mr. WEBSTER. Is the execution admitted?

Mr. CHOATE. Yes.

Mr. WEBSTER. Counsel for petitioner calls particular attention to the recital of the machines set forth in the lease just offered in evidence reading as follows:—

"McKay Pricking Machine,  
McKay Heel Compressing and Loading Machine,  
Fisher Compressing Machine,  
Bresnahan Compressing Machine,  
Heel Trimming and Randing Machine,

Heel Trimming and Randing (including Grinding) Machine,  
No. 2 Automatic Heel Nailing and Trimming Machine,  
Rapid Nailing Machine,  
Union Heel Trimmer,  
Spring Heel Trimmer,  
American Lightning Nailing Machine,  
American Compressing Machine,  
Columbia Compressing Machine,  
Automatic Heel Loading and Compressing Machine,  
Improved National Nailing Machine,  
Columbia Nailing Machine,  
Automatic Spring-heel Nailing Machine,  
Standard Automatic Nailing Machine,  
Standard Automatic Nailing Machine, without Pricking Attachment,

Standard Automatic Loading or Compressing and Loading Women's Work Machine."

In support of petitioner's contention that the Goodyear Shoe Machinery was engaged in putting out machines early in 1899, and it being found difficult to procure any documents relating to that exact date, petitioner offers in evidence memoranda of the Goodyear Shoe Machinery Company dated November 29, 1897, and memoranda of the Goodyear Shoe Machinery Company dated March 27, 1900, in both of which memoranda the following machines are recited : —

" Goodyear Welt Shoe Machine, Chain Stitch,  
Goodyear Turned Shoe Machine, Chain Stitch,  
Goodyear Turned or Welt Shoe Machine, Lock Stitch,  
Goodyear Outsole Stitcher, (Lock Stitch, "Rapid"),  
Welt Channeller,  
Outsole Channeller,  
Turn Channeller,  
Channel Lip Turner,  
Universal Rounder and Channeller,  
Sole Layer,  
Hadaway Stitch Separating Machine,  
Automatic Levelling Machine,  
Welt Beater,  
Bobbin Winder,  
Welt Groover,  
Welt Splitter,  
Moulder,

Channel Opener,  
Universal Shanking-Out Machine,  
Inseam Trimmer."

Mr. CHOATE. We will admit the signature for the purpose of this case without waiving our objection to the competency of the papers for the purpose offered.

[*Proposal and acceptance dated November 29, 1897, and proposal and acceptance dated Whitman, Mass., March 27, 1900, introduced in evidence and marked "Plaintiff's Exhibit 241".*]

Mr. WEBSTER. Petitioner also, in support of its contention that the Goodyear Shoe Machinery Company was engaged in putting out machines early in 1899, offers memoranda of the Goodyear Shoe Machinery Company dated February 3, 1898, addressed to Messrs. L. C. Bliss & Co., Whitman, Mass., in which the following machines are recited:—

"Goodyear Turned or Welt Shoe Machine, Chain Stitch,  
Goodyear Turned or Welt Shoe Machine, Lock Stitch,  
Goodyear Outsole Stitcher, (Lock Stitc'h, 'Rapid'),  
Welt Channeller,  
Outsole Channeller,  
Turn Channeller,  
Channel Lip Turner,  
Universal Rounder and Channeller,  
Automatic Leveller,  
Sole Laying Machine,  
Welt Beater,  
Shank Skiver,  
Turn Trimmer,  
Bobbin Winder,  
Welt Groover,  
Welt Splitter,  
Moulder,  
Channel Opener,  
Universal Shanking-out Machine,  
Stitch Separator."

Mr. CHOATE. We will admit the execution without waiving our objection to the competency of the papers.

[*Letter of Goodyear Shoe Machinery Company to L. C. Bliss & Co., dated February 3, 1898, introduced in evidence and marked "Plaintiff's Exhibit 242".*]

Mr. WEBSTER. Petitioner offers in evidence catalogue of McKay-Bigelow Heeling Machine Association bearing date on the front cover 1890, and bearing date on the inner cover, page 1, 1888.

Mr. CHOATE. Please note the defendants' objection to the exhibit as not properly identified, as not competent, as immaterial, irrelevant and inadmissible.

[*Catalogue of McKay-Bigelow Heeling Machine Association, 1888-1890, marked "Plaintiff's Exhibit 243".*]

Mr. WEBSTER. Petitioner offers in evidence catalogue of the Chase Lasting Machine Company dated 1886.

Mr. CHOATE. What is this offered for, Mr. Webster?

Mr. WEBSTER. It shows that certain machines were being put out, and we expect to connect it up later.

Mr. CHOATE. Note the defendants' objection to the exhibit as not tending to prove anything within the scope of the order or bill, as not properly identified, and as incompetent, immaterial, irrelevant and inadmissible.

[*Catalogue of the Chase Lasting Machine Company, dated 1886, marked "Plaintiff's Exhibit 244".*]

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DEPOSITION OF CHARLES MCC. CHAPMAN (*recalled*).

*Direct Examination by ALLEN WEBSTER, Esq., of Counsel for Complainant.*

Mr. CHOATE. Are you now calling Mr. Chapman again?

Mr. WEBSTER. In view of your objection, he will have to be called again.

Mr. CHOATE. I should like to have it noted on the record that we have understood Mr. Chapman's deposition has been closed except for anything that has been forgotten, and this does not appear to be any evidence that has been forgotten by the United States. We should therefore like to have our objection noted.

Mr. WEBSTER. Counsel for the United States states that, as heretofore stated by him, Mr. Chapman testified only with reference to particular machines and patents, and I now desire to put him on with reference to other machines and patents. For that purpose he is recalled.

Mr. CHOATE. We did not understand that counsel for the United States so stated, although we particularly inquired if his direct evidence had been closed, and should not have cross-examined him had we not been advised that it had been.

*Int.* 46. Kindly state whether since you have testified in this case you have examined the machine illustrated in photograph Plaintiff's Exhibit 232; and, if so, state where you examined the same.

*Ans.* I have examined the machine of the said exhibit, having found the same at the factory of the Commonwealth Shoe and Leather Company, Whitman, Massachusetts. In so examining the machine, I compared the machine with the illustration of the photograph Plaintiff's Exhibit No. 232, and also noted the number of the machine at the said factory to be 228.

*Int.* 46. State whether you have made comparison between the welt illustrated in Plaintiff's Exhibit Photograph No. 232 with the illustration of welt and turn machine found on page 13 of catalogue of parts of Goodyear Shoe Machinery Company, Plaintiff's Exhibit 220.

*Ans.* I have made such comparison.

*Int.* 48. State the likenesses and differences, if any, you found on making such comparison.

*Ans.* In comparing the machine of Plaintiff's Exhibit No. 232 with the welt and turn machine of the catalogue of Plaintiff's Exhibit 220, and the illustration of which machine found at page 13 of said catalogue, I found the said machine and the machine of the cut of the catalogue to be substantially the same in point of structural features as illustrated in the catalogue. One difference noted by me was the lack in the machine of the catalogue at page 13 of the so-called LaChapelle tension release and stop mechanism. I, however, found that the said tension release parts are referred to in said catalogue of Plaintiff's Exhibit 220 on pages 225 and 226. I made comparison of the numbers of the said parts, as indicated in the catalogue, with the numbers on certain of the parts of the machine and found them to correspond. I particularly noted the numbers 1103, 1106 and 1108 on the corresponding parts of

the machine, and also found that other numbers in the list referred to parts descriptive of those found in the machine.

*Int.* 49. Have you examined, and do you understand, English patent No. 13,366 of 1888, to French and Meyer, a copy of which I now hand you?

*Ans.* I have examined this patent and believe I understand the same.

Mr. WEBSTER. English patent to French and Meyer 13,366 of 1888 put in evidence and marked "Plaintiff's Exhibit 245".

*Int.* 50. Have you made comparison between the drawings, specification and claims of the English patent Plaintiff's Exhibit No. 245 and the construction illustrated and described and claimed set forth in United States patent to French and Meyer No. 412,704, Plaintiff's Exhibit 214, and Briggs patent No. 461,793, Plaintiff's Exhibit 217? And if you have made such examination and comparison, kindly state what you found with reference to their likenesses and differences.

Mr. CHOATE. Please note the defendants' objection to Exhibit 245 and to the question now propounded, on the ground that it is not within the scope of the order, as incompetent, immaterial, irrelevant and inadmissible.

*Ans.* I have made a comparison of the British patent No. 13,366 of 1888 with the United States French *et al.* patent No. 412,704, Plaintiff's Exhibit 214, and the United States patent to Briggs 461,793, Plaintiff's Exhibit 217, both as to illustration, text or description and substance of subject-matter of the claims of the several patents. Referring to the British patent and the French *et al.* patent No. 412,704, I find that the first seven figures of the latter patent are substantially identical with the seven figures of the British patent, both as to views, position of parts and subject-matter illustrated, and practically as to reference characters and disposition of the same on the several figures of the drawings. In the United States patent there are several figures, 8 to 19 inclusive, which are not in the drawings of the British patent, but which relate entirely to details of the construction and apparently better illustration of parts. In point of descriptive matter, the

text of both the patents seems to be substantially the same, and in all material particulars the text of the one will read upon the drawings of the other. As to the claims, the first three claims of the British patent run to the structure shown in the United States patent, and the five claims of the United States patent run to the subject-matter illustrated in the British patent and described therein. There is a difference in phraseology in the claims of the respective patents, and in consequence a slight difference in scope of claims. In substance, however, the structure claimed is the same. Referring now to the Briggs patent 461,793, Plaintiff's Exhibit 217, I find that the method of this United States patent is substantially described and claimed in the British patent 13,366 of 1888, and that the subject-matter of the claim of said Briggs patent is illustrated in the British patent 13,366. In the British patent there are two claims, Nos. 4 and 5, which set up the method of making chain stiches shown, described and claimed in the Briggs patent. There is a difference in the phraseology and claim wording in the British claims 4 and 5, but the subject-matter of the British claims 4 and 5 is substantially that of the claim of the United States Briggs patent.

Mr. CHOATE. Please note that the defendants object to so much of the witness' answer as compares the United States patent to Briggs with the British patent as immaterial, irrelevant, incompetent and inadmissible.

*Int. 51.* State whether you have quite recently examined a machine known as the Chase laster, and whether as a result of such examination you understand the construction and operation of the same.

*Ans.* I have examined several Chase lasting machines, so called, one in South Framingham, Massachusetts, at the factory of the R. H. Long Machinery Company, and several at the factory of the Commonwealth Shoe and Leather Company, Whitman, Massachusetts, and believe that I understand the structure and mode of operation of the said machines.

*Int. 52.* State whether you have examined and understand United States patents to Chase, lasting machine No. 348,060, dated April

27, 1886; patent to Chase, machine for lasting boots or shoes, No. 364,088, dated May 31, 1887; patent to Chase, lasting machine, dated January 10, 1888, No. 376,368, and patent to Chase, tack driving mechanism, No. 483,375, dated September 27, 1892, copies of which I now hand you.

*Ans.* I have examined the several patents referred to and believe that I understand the same.

*Int.* 53. State whether you have made comparison between the machines illustrated and described in the patents referred to and the construction referred to in the claims of said patents with the machines which you say you examined.

*Ans.* I have.

*Int.* 54. State the likenesses and differences between the structures of the machines examined and the structures and operations of the machines shown in the patents referred to in the claims thereof.

*Ans.* Referring first to Chase patent 348,060, dated April 27, 1886, I made a careful comparison of the subject-matter of this patent with the machine at the Long factory in South Framingham, and found the subject-matter of the patent, in point of illustration, description and both the claims, to be embodied in said machine. Having studied the machine in connection with the said patents and becoming quite familiar with it, I also examined several machines at the Whitman factory and found them to contain the same subject-matter. The machine at the Long factory I assume is No. 300, or approximately that, owing to the fact of the parts of the machine having the series numbers 301, etc. There was no number on the face of this machine. The base of the machine, however, had the following marking: "The Property of the Chase Lasting Machine Company." In the factory at Whitman, however, the numbers of two of the machines are 529 and 801. I did not take the numbers of the other three. The base of these several machines, however, all had the same marking as the machine at South Framingham, viz.: "The Property of the Chase Lasting Machine Company."

Referring to the Chase patent No. 364,088, May 31, 1887, I

made a careful comparison of the subject-matter of this patent, as illustrated with the machine at the South Framingham factory, and found said machine to contain the subject-matter of the patent with the exception of a few details of construction, said details having reference to the gear drive, illustrated in Figure 1 of the said patent; in Figures 4, 5 and 6 the gearing shown in these several figures not being present in the said machine. This was also true of the several machines at the Whitman factory. Also, the particular means shown for adjusting the toe-clamp shown in Figure 2 is not embodied in the South Framingham machine in the matter of the screw and slot construction indicated by 4 and 5 in said Figure 2. In the machines at the said factory there was simply an adjusting screw bearing upon the opposite ends of the toe-clamp. In point of operation and function the structures, however, are the same. In Figure 7 of the Chase patent No. 364,088 is illustrated a pliable toe-clamp or clasp. In the machine at the South Framingham factory, my recollection is that the structure of this portion or part of the machine was slightly different in that instead of being a continuous link construction the machine has a solid central portion, to the opposite ends of which the links are connected. In substance, however, the structures of the patent and the machine are substantially identical. I carefully read the claims of this patent upon the said South Framingham machine and found that claims 1, 2, 3 and 4 and 9, 10 and 11 are fully and clearly embodied in said machine.

Referring to the Chase patent No. 376,368, dated January 10, 1888, I made the same careful comparison of the subject-matter thereof with the South Framingham machine and found the structure shown and described and claimed therein to be embodied in said machine, with the difference heretofore noted in connection with the previous patent running to the detail of the solid central portion of the clamp or clasp. I also compared the claims of this Letters Patent with the machine at South Framingham and found the substance of all four of the said claims fully embodied in the said machine.

Referring now to the Chase patent No. 483,375, dated Septem-

ber 27, 1892, which in subject-matter is for a tack-driving mechanism, I found the instrument described and shown in this patent suspended on the machine at the South Framingham factory, and similar instruments in use by the operatives in connection with the several machines at the Whitman factory. At the South Framingham factory I found the following marking on the instrument: "1150. The Property of the Chase Lasting Machine Company. Patd. October 14, 1884, January 25, 1887, September 27, 1892." I took this instrument all apart and carefully compared the same with the structure illustrated in the said patent 483,375 and found the subject-matter to be exactly the same. I also carefully read the claim of the patent on the instrument and found the structure thereof to be fully embodied in the instrument No. 1150.

Mr. WEBSTER. Copies of the four patents referred to by the witness put in evidence as one exhibit and marked "Plaintiff's Exhibit 246".

[Copies of the following patents, patent to Chase, lasting machine, No. 348,060, dated April 27, 1886;

Patent to Chase, machine for lasting boots or shoes, No. 364,088, dated May 31, 1887;

Patent to Chase, lasting machine, dated January 10, 1888, No. 376,368;

And patent to Chase, tack-driving mechanism, No. 483,375, dated September 27, 1892, introduced in evidence and marked "Plaintiff's Exhibit 246".]

Mr. CHOATE. I should like to have our objection noted to the exhibit as not supporting any claim included within the scope of the order or the bill; as incompetent, irrelevant, immaterial and inadmissible.

Int. 55. Kindly state whether you have recently examined a machine known as a Universal rounding and channeling machine of which Plaintiff's Exhibit (photograph) No. 233 is a picture.

Ans. I have, one at the South Framingham factory and one at the Whitman factory. The machine at the South Framingham factory has the following marking on the stand-plate: "The Property of the United Shoe Machinery Co., Lessors, Goodyear Depart-

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ment, Goodyear Universal Rounding and Channelling Machine No. 408." The numbers on the parts of the head of the machine are all 2100 and upwards. The number of the machine at the Whitman factory which I examined is 31, and is that which is illustrated in the photograph Plaintiff's Exhibit No. 233.

*Int.* 56. Kindly examine copy of patent to Briggs, rough rounding and channeling machine, dated November 24, 1891, No. 463,-982, issued to the Goodyear Shoe Machinery Company as assignor, and state whether you understand the same.

*Ans.* I have examined the said patent and believe that I understand the same.

*Int.* 57. Kindly examine British patent No. 3497 of 1896, and state whether you understand the same.

*Ans.* I have carefully examined this patent and believe that I understand the same.

*Int.* 58. State whether you have made comparison between the machine illustrated in Plaintiff's Exhibit 233 and the machines illustrated, described and referred to in the claims of the two patents to which you have just made reference, and state whether you find any differences or likenesses between the same, and, if so, kindly point them out.

*Ans.* At the South Framingham factory I carefully compared machine No. 408 with the subject-matter of the Briggs patent No. 463,982, and while I found that in point of structure and organization of the two machines there is a vast difference, I also found that in point of generic subject-matter the structure of the Briggs patent 463,982 and the structure of the machine No. 408 is in certain material particulars the same. The particulars referred to are the subjects-matter of claims 1, 2 and 3 of the Briggs patent No. 463,982. This subject-matter I found to be fully embodied in the Universal rough rounding machine No. 408 at the South Framingham factory. At the same time and place I compared the said machine No. 408 with the two patents to French and Meyer, one for sole channeling and trimming machine, No. 600,883, dated March 22, 1898, and the other for trimming and channeling machine, No. 599,602, dated February 22, 1898. In making my comparison

of the last two patents with the machine at the South Framingham factory, I went into all the detail possible and found that the subject-matter of the two patents, in description and illustration and in nearly all the claims thereof, is embodied in said machine. While I did not compare specifically the two patents with the machine at the Whitman factory, my knowledge of the structure of the patents and of rough rounding machines enabled me to note that in point of structure and mode of operation the said Whitman machine No. 31 is in all material respects substantially the same as that of two French and Meyer patents Nos. 600,883 and 599,602. Subsequently, I compared the subject-matter of the British patent No. 3497 of 1896 with the subject-matter of the two French and Meyer patents Nos. 600,883 and 599,602, and find that the subject-matter of the British patent is substantially the same as that of the French and Meyer United States patent No. 600,883. In fact, the several illustrations of the two patents just referred to are substantially identical, reference characters and all. There are more figures of drawings in the United States patent, but they show simply different views of the same machine. I direct attention to the fact, also, that in my comparison I found that, in point of general subject-matter, the British patent's structure and that of the French and Meyer patent 599,602 is substantially the same, there being a few structural differences in the United States patent not found in the British patent. This may be due, however, to the fact that the copy of specification of the patent, which I have been able to obtain and examine, has been somewhat amended, presumably under the British practice, resulting in cancellation of certain portions of the specification of the British patent, leaving those portions, however, clearly readable, but completely eliminating certain claims and figures of the drawings of the patent. As to the claims of the two United States patents and the British patent, the subject-matter, after careful comparison by me, I find to be substantially the same. There is a great difference in claim, wording and phraseology of the British claims, due to the patent practice in Great Britain, but in point of substance and generic subject-matter the claims of the

British patent run to the same subject-matter as the two United States French and Meyer patents.

Mr. CHOATE. Please note our objection to all that part of the answer which refers to, or makes comparison with, the British patent 3497 of 1896 as not tending to support anything within the scope of the order or the bill, and as incompetent, irrelevant, immaterial and inadmissible, and as not responsive to the question.

Mr. WEBSTER. Petitioner offers in evidence the three United States patents referred to by the witness, the same being French and Meyer, trimming and channeling machine, No. 599,602, dated February 22, 1898; French and Meyer, sole channeling and trimming machine, No. 600,883, March 22, 1898; Briggs, rough rounding and channeling machine, No. 463,982, November 24, 1891.

[*Copies of patents enumerated above introduced in evidence and marked "Plaintiff's Exhibit No. 247".*]

Mr. WEBSTER. The petitioner also puts in evidence copy of British patent No. 3497 of 1896 to French and Meyer entitled "Improvement in machine for trimming and channeling soles of boots and shoes."

[*Copy of British patent No. 3497 of 1896 to French and Meyer entitled "Improvement in machine for trimming and channeling soles of boots and shoes", introduced in evidence and marked "Plaintiff's Exhibit No. 248".*]

Mr. CHOATE. Please note our objection to the introduction of Exhibit 248, as not tending to support anything within the scope of the order or the bill, as incompetent, immaterial, irrelevant and inadmissible.

*Int. 59.* Kindly state whether you have made a careful examination of the illustration of rapid outsole stitcher found on page 61 of the Goodyear Shoe Machinery catalogue of January 1, 1897, the same being Plaintiff's Exhibit 220, with the "Long" stitcher shown in photograph Plaintiff's Exhibit 208, to which you have heretofore made reference; and if you answer yes, state whether the machine referred to is the same or different from the machine illustrated on said page 61.

Mr. CHOATE. Please note the defendants' objection to this ques-

tion as relating to a branch of the inquiry upon which the witness has already been fully examined on direct and cross and as to which his examination has been completed.

*Ans.* I have made a careful comparison of the machine illustrated on page 61 of the Plaintiff's Exhibit No. 220 with the Long rapid stitcher illustrated in Plaintiff's Exhibit 208. In making that comparison I found that practically all the details of construction, so far as I can make them out in the cut on said page 61, are embodied in the said Long machine. In some respects I was, of course, compelled to simply compare the likeness of one part with another, but so far as I could determine the said Long machine embodies the entire structure and arrangement of parts shown in the cut at page 61 of the said Goodyear catalogue of 1897.

*Int.* 60. Kindly state whether you have recently examined a separator at the Whitman factory.

*Ans.* I have examined a separator at the Whitman factory bearing the number 124.

*Int.* 61. Kindly examine the cut shown on page 89 of Plaintiff's Exhibit 220 and compare the same with the separator which you say you examined, and point out the likenesses and differences, if any there be.

*Ans.* I made a careful comparison of the separator at the Whitman factory with the cut illustrated on page 89 of the said Plaintiff's Exhibit 220 and found that the said Whitman separator embodies substantially all the features of construction illustrated in the said cut at page 89 of the catalogue. A detail of difference between the two is the facial construction of the support for the material, that on the machine being without the concentric grooves which appear to be illustrated in the cut at page 89 of the catalogue. A feature of construction which I found in the Whitman machine, and which I am unable to determine positively is in the machine of the cut of the catalogue, relates to a means by which the denting and separating blade is held periodically from upward movement. This construction in the machine has the function of preventing unusually hard materials or an extra thick material from forcing the separating blade vertically. A device thus holds the blade in

proper position whereby to produce uniform work. As stated, the cut at page 89 of the catalogue is somewhat obscure as to this feature, and I am unable to say that the said feature is shown in the said cut. The machine which I examined has a name plate which includes the following: "Hadaway Stitch Separator, No. 124, Patented. Property of the Goodyear Shoe Machinery Co., Boston, Mass., Lessor."

*Int.* 62. Please examine the photograph I now hand you, being marked "Plaintiff's Exhibit 235", and state whether you have recently examined the machine of which said photograph is a picture.

*Ans.* I have examined the machine which is illustrated in this exhibit.

*Int.* 63. What is the type of machine referred to?

*Ans.* A channeling machine.

*Int.* 64. Please examine the cut on page 95 of the innersole channeler in the Goodyear catalogue Plaintiff's Exhibit 220, and compare the cut in the catalogue with the machine examined by you, and state the likenesses or differences.

*Ans.* After making a careful comparison of the machine illustrated in the catalogue in the cut on page 95, I am able to state that there are a couple of differences between it and the machine of the photograph Plaintiff's Exhibit 235. One difference has reference to the lever extending horizontally over the driving shaft of the machine, to which a chain is connected for the purpose of operating said lever, the latter having the function of lifting one of the cutting devices. Another difference is that a driving pulley has been added to the machine in the Whitman factory on the driving shaft adjacent to the crank. One other detail of difference is the adjusting means which is illustrated in the photograph exhibit, and which is present in the Whitman factory machine, this particular adjusting means for the cutter not being present in the catalogue machine at page 95, the adjustment there being simply a screw. The Whitman factory machine, or machine of the photograph Plaintiff's Exhibit 235, is substantially the same as that illustrated on page 4 of another catalogue which I have, Plaintiff's

Exhibit No. 190. The Whitman factory machine which I examined is No. 2,072.

*Int. 64.* Kindly state whether in mode of operation the machine you examined and the machine illustrated in the Goodyear catalogue are the same or different.

*Ans.* So far as I can determine, the mode of operation is the same. The machine, when I examined it, was set for special work, the special work being that which is illustrated by the piece of material on which I saw the machine operate, and which I here produce and have marked with the machine number "2,072".

*Mr. WEBSTER.* Specimen referred to by the witness put in evidence and marked "Plaintiff's Exhibit 249".

*Int. 65.* Kindly state whether you have recently, at the Whitman factory, examined an outsole channeler; and, if so, state whether you have compared the same with the outsole channeler illustrated on page 108 of Plaintiff's Exhibit 220.

*Ans.* I have examined such machine at the Whitman factory, said machine being 419, and carefully compared the same with the catalogue cut of such a machine at page 108, Plaintiff's Exhibit 220.

*Int. 66.* Kindly state what you found by way of likenesses or differences.

*Ans.* The Whitman factory machine is substantially identical with that of the catalogue cut at page 108, but I noted that the catalogue cut of the machine is lacking the cutter which was on the machine at the Whitman factory which I examined. The place for the application of the cutter is shown in the catalogue cut at page 108, and various cutters or knives are illustrated on pages 110, 111 and 112 of said catalogue.

*Int. 67.* Please examine the photograph I now hand you, the same being marked "Plaintiff's Exhibit 234", and state whether you have recently examined the machine of which said exhibit is a photograph.

*Ans.* I have examined that machine at the Whitman factory and found it to be machine No. 35.

*Int. 68.* Kindly examine the cut on page 28 of Plaintiff's Exhibit 190, the same being catalogue of the United Shoe Machin-

ery Company of 1902, and state the likenesses and differences between the machine examined by you and the illustration referred to.

*Ans.* I made a careful comparison of this machine at the Whitman factory with the photograph and also with the cut in the catalogue of Plaintiff's Exhibit 190 and found that the only difference in construction between the Whitman factory machine and that of the cut is in the shape of the leveling rollers. In the catalogue cut at page 28 the leveling rollers are shown as having a grooved contour longitudinally, while the rollers of the machine are straight cylinders. The rollers such as are illustrated in the cut of catalogue Plaintiff's Exhibit 190 were in a box beside the machine, and those I examined and compared with the cut and found to be the same as the latter.

*Int.* 69. State whether you have recently examined a pegging machine at the Whitman factory.

*Ans.* I have examined such machine.

*Int.* 70. Kindly examine cut on page 76 of Plaintiff's Exhibit 190, and compare the construction and operation of the machine illustrated in the cut with the machine examined by you.

*Ans.* The Whitman factory Davey pegging machine is what I would term an old style. The one in the catalogue at page 76 is what might be called a modernized machine. In general appearance the two machines are very much alike. There are, however, some differences between the two machines, which may be noted as follows: —

The horn, or support, on which the shoe rests during operation has its supporting shaft and co-operating springs exposed in the Whitman factory machine, while in the catalogue machine at page 76 such parts are apparently covered by a casing. In consequence, I am unable to state that the structure at this point is identical with that of the factory machine. The frame casting is slightly different in shape, that of the catalogue being a much more graceful and modernized structure and being much more compact than the Whitman factory machine. The Whitman factory machine has its driving wheel at the end of the driving shaft outside the casing.

In the catalogue machine at page 76 the driving wheel seems to be partially enclosed, and the structure of the head of this machine is much more compact. So far as I have been able to determine from the catalogue machine as shown in the cut, page 76, coupled with the description, it is my opinion that in point of general mode of operation and functional results the two machines are substantially the same. I am not able to say that the Davey pegging machine at the Whitman factory is able in its operation to drive two or three rows of pegs at one time, as seems to be the function of the catalogue machine.

*Int.* 71. State whether you have examined an Amazeen skiver recently at the Whitman factory and compared the same with the high-speed Amazeen skiving machine illustrated on page 132 of Plaintiff's Exhibit 190; and, if so, kindly state the likenesses and differences.

*Ans.* I examined several so-called Amazeen skivers at the Whitman factory and made comparison between the same and the Amazeen skivers illustrated on page 132 and also on page 136 of the catalogue. I found the following in connection with all the Whitman factory machines as compared with the two Amazeen skivers illustrated in the said catalogue. No one of the Whitman factory machines contains the gear or worm drive shown in the catalogue machines. The Whitman factory machines, each of them, has a pulley and belt drive for all the parts, the gears and worms being eliminated from said machines. The factory machines had been evidently made over and transformed from gear to belt drive, as the old framework of the gear-driven machine was present, and castings and supports for the belt-driving mechanism were applied to said frames. One of the frames, or supports, for the belt-drive which I examined had cast therewith the inscription: "Dunham Improvement, Patent Pending." In point of function and mode of operation, the Whitman factory machines are identical in all material and substantial respects with those of the two catalogue cuts at pages 132 and 136 of Plaintiff's Exhibit 190; that is to say, the obvious mode of operation of the catalogue machines is necessarily that of the several skiving machines at the Whitman factory,

since the arrangement of parts, which may be called the executive elements of the machine, is substantially the same in the factory machines as in the catalogue machines.

Mr. WEBSTER. So far as at present advised, I have nothing further to inquire of this witness at the present time. Opposing counsel are invited to cross-examine.

Mr. CHOATE. Does that complete Mr. Chapman's entire deposition?

Mr. WEBSTER. I think so. I may find something else. I am entirely frank to state as at present advised that completes it.

Mr. CHOATE. Relying upon that statement, we do not care to cross-examine.

Mr. WEBSTER. Petitioner offers in evidence group of patents, sixteen in number, being copies of patents specified in Plaintiff's Exhibit No. 3, being lease dated March 16, 1898, between the Goodyear Shoe Machinery Company and Kiner Brothers.

[*Copies of the following patents introduced in evidence and marked "Plaintiff's Exhibit 250":* —

*C. Dancel and A. Eppler, Jr., sole sewing machine, No. 240,307, patented April 19, 1881;*

*D. H. Campbell, wax thread sewing machine, No. 253,156, patented January 31, 1882;*

*A. Keats, machine for sewing boots and shoes, No. 260,990, patented July 11, 1882;*

*M. H. Pearson, boot and shoe sewing machine, No. 267,798, patented November 21, 1882;*

*Z. T. French, sole sewing machine, No. 317,758, patented May 12, 1885;*

*Z. T. French, sole sewing machine, No. 317,759, patented May 12, 1885;*

*Z. T. French and W. C. Meyer, shoe sewing machine, No. 412,704, patented October 8, 1889;*

*Z. T. French, channeling machine, No. 453,999, patented June 9, 1891;*

*H. Briggs, method of forming chain stitches, No. 461,793, patented October 20, 1891;*

*H. Briggs, rough rounding and channeling machine, No. 463,-967, patented November 24, 1891;*

*I. LaChapelle, tension device for sewing machines, No. 488,505, patented December 20, 1892;*

*H. E. Cole, sewing machine, No. 495,452, patented April 11, 1893;*

*H. Briggs, take-up for shoe sewing machines, No. 518,911, patented April 24, 1894.]*

Mr. WEBSTER. I should like to change that. It is thirteen patents recited in Plaintiff's Exhibit No. 3, being the patents recited in said lease up to and including the one dated April 24, 1894, offered for the purpose of showing that the lessor was at that time putting out machines under patents, and which patents expired prior to the filing of the petition in this case.

[Signature waived.]

Attest: CHARLES K. DARLING, *Special Examiner.*

[Adjourned subject to agreement of counsel.]

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DISTRICT COURT OF THE UNITED STATES,  
DISTRICT OF MASSACHUSETTS.

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IN EQUITY.

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No. 301 (C. C. 911).

UNITED STATES OF AMERICA, PETITIONER,  
v.

UNITED SHOE MACHINERY COMPANY, OF NEW JERSEY, ET AL.,  
RESPONDENTS.

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ORDER EXTENDING TIME FOR TAKING TESTIMONY BEFORE  
EXAMINER UNDER ORDER DATED JUNE 27, 1913.

September 12, 1913.

PUTNAM, DODGE and BROWN, J.J. It is ordered (both parties consenting hereto) that the times for taking testimony under the order dated June 27, 1913, as modified by the order of August 8, 1913, be further extended so that the petitioner be allowed until September 1, 1913, inclusive, for evidence in chief; the respond-

ents be allowed until November 1, 1913, inclusive, for evidence in defence, and the petitioner be allowed to November 14, 1913, inclusive, for rebuttal.

By the Court,

CHARLES K. DARLING, Clerk.

The above-named parties hereby consent to the entry of the foregoing order.

CHARLES F. CHOATE, JR.,  
*for Defendant.*

WILLIAM S. GREGG,  
*Special Assistant to the Attorney General.*

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BOSTON, MASS., October 6, 1913.

Mr. WEBSTER. By virtue of agreement made between counsel for petitioner and defendants, entered into before the expiration of the petitioner's time to introduce evidence, that petitioner might, after the expiration of the time assigned to it, introduce copies of patents, certified copies of assignments of patents, and the testimony of one witness, all to have the same force and effect as if introduced during the time allotted to the petitioner, the petitioner now offers the following:—

Petitioner offers in evidence two bound volumes, A and B, comprising copies of United States patents recited in lease and license agreement between McKay Heeling Machine Association and Selz, Schwab & Company dated March 21, 1898, said lease having been introduced in evidence as Plaintiff's Exhibit No. 240, said patents being numbered, dated and entitled as follows:—

No. 212,116.

No. 212,190, Chase, February 11, 1879; burnishing tool (expired February 11, 1896).

No. 217,866, Glidden, July 29, 1879; heel trimming machine (expired July 29, 1896).

No. 217,867, Glidden, July 29, 1879; heel trimming machine (expired July 29, 1896).

- No. 224,005, Fairfield, February 3, 1880; machinery for sorting pieces of leather (expired February 3, 1897).
- No. 224,011, Glidden, February 3, 1880; heel slicing machine (expired February 3, 1897).
- No. 224,012, Glidden, February 3, 1880; machine for forming heel pile (expired February 3, 1897).
- No. 233,504.
- No. 236,148, Ferren, January 4, 1881; heel breasting machine (expired January 4, 1898).
- No. 246,945, Fisher, September 13, 1891; machine for repairing heels for boot and shoes (expired September 13, 1898).
- No. 248,582, Fisher, October 25, 1881; heel nailing machine (expired October 25, 1898).
- No. 250,654, Fisher, December 13, 1881; machine for attaching heels to boots and shoes (expired December 13, 1898).
- No. 252,215, Henderson, January 10, 1882; heel nailing machine (expired January 10, 1899).
- No. 258,905, Fisher, June 6, 1882; boot and shoe heeling machine (expired June 6, 1899).
- No. 259,687, Henderson, June 20, 1882; heel nailing machine (expired June 20, 1899).
- No. 261,696, Fifield, July 25, 1882; heel trimming machine (expired July 25, 1899).
- No. 266,298, McMullett, October 24, 1882; last (expired October 24, 1899).
- No. 267,544, King and Strong, November 14, 1882; heel trimming machine (expired November 14, 1899).
- No. 271,117, Raymond, January 23, 1893; heel nailing machine (expired January 23, 1900).
- No. 271,118, Raymond, January 23, 1883; heel nailing machine (expired January 23, 1900).
- No. 280,399, Raymond, January 3, 1883; heel nailing machine (expired January 3, 1900).
- No. 277,207, Bourgeois, May 8, 1883; heel burnishing tool (expired May 8, 1900).
- No. 278,426, Glidden, May 29, 1883; last (expired May 29, 1900) .

- No. 280,861, Raymond and Wheeler, July 10, 1883; heel nailing machine (expired July 10, 1900).
- No. 287,472, Raymond 2d, October 30, 1883; heel nailing machine (expired October 30, 1900).
- No. 289,857, Raymond, December 11, 1883; heel nailing machine (expired December 11, 1900).
- No. 290,109, Raymond, December 11, 1883; heel nailing machine (expired December 11, 1900).
- No. 293,604, Tyler and Smith, February 12, 1884; machine for finishing heel bottoms (expired February 12, 1901).
- No. 297,787, Gordon and Dodge, April 29, 1884; trace trimming machine (expired April 29, 1901).
- No. 301,462, Tyler, July 1, 1884; pegging machine (expired July 1, 1901).
- No. 305,723, Tyler, September 23, 1884; heel nailing machine (expired September 23, 1901).
- No. 310,488, Allen, January 6, 1885; heel nailing machine (expired January 6, 1902).
- No. 314,411, Allen, March 24, 1885; heeling block (expired March 24, 1902).
- No. 315,069, Raymond, April 7, 1885; heel nail plate (expired April 7, 1902).
- No. 315,070, Raymond, April 7, 1885; wire heel nail blank (expired April 7, 1902).
- No. 315,458, Raymond, April 7, 1885; nail holder and carrier (expired April 7, 1902).
- No. 316,177, Raymond, April 21, 1885; heel attaching machine (expired April 21, 1902).
- No. 316,827, Raymond, April 28, 1885; heel nailing machine (expired April 28, 1902).
- No. 316,826, Raymond, April 28, 1885; heel nailing machine (expired April 28, 1902).
- No. 316,661, Raymond, April 28, 1885; heel nailing machine (expired April 28, 1902).
- No. 316,894, Henderson, April 28, 1885; heel nailing machine (expired April 28, 1902).

- No. 10,588, Henderson, April 28, 1885; heel nailing machine (expired January 10, 1899).
- No. 10,589, Henderson, April 28, 1885; heel nailing machine (expired June 20, 1899).
- No. 317,199, Raymond, May 5, 1885; heel nailing machine (expired May 5, 1902).
- No. 317,672, Raymond, May 12, 1885; heel nailing machine (expired May 12, 1902).
- No. 317,647, Henderson, May 12, 1885; heel nailing machine (expired May 12, 1902).
- No. 317,646, Henderson, May 12, 1885; heel nailing machine (expired May 12, 1902).
- No. 317,851, Raymond, 2d, May 12, 1885; heel nailing machine (expired May 12, 1902).
- No. 318,134, Raymond, May 19, 1885; heel nailing machine (expired May 19, 1902).
- No. 319,124, Raymond, June 2, 1885; heel distributer for heel nailing machine (expired June 2, 1902).
- No. 319,377, Allen, June 2, 1885; heeling machine (expired June 2, 1902).
- No. 321,401, Tyler and Merritt, June 30, 1885; heeling machine (expired June 30, 1902).
- No. 321,530, Raymond, 2d, July 7, 1885; heel nailing machine (expired July 7, 1902).
- No. 322,126, Raymond, July 14, 1885; heel attaching machine (expired July 14, 1902).
- No. 320,050, Demary, June 16, 1885; heel attaching machine (expired June 16, 1902).
- No. 321,696, Demary, July 7, 1885; manufacturing and attaching heels to boots or shoes (expired July 7, 1902).
- No. 321,756, Raymond 2d, July 7, 1885; heel nailing machine (expired July 7, 1902).
- No. 322,562, Raymond, July 21, 1885; sole nailing machine (expired July 21, 1902).
- No. 322,561, Raymond, July 21, 1885; process of applying top lifts to heel blanks (expired July 21, 1902).

- No. 322,560, Raymond, July 21, 1885; heel nailing machine (expired July 21, 1902).
- No. 321,017, Glidden, June 30, 1885; heel trimming machine (expired June 30, 1902).
- No. 322,945, Manley, July 28, 1885; heel sole edge trimming machine (expired July 28, 1902).
- No. 325,272, Raymond, September 1, 1885; heel making machine (expired September 1, 1902).
- No. 325,271, Raymond, September 1, 1885; method of making heel nail plates (expired September 1, 1902).
- No. 326,150, Raymond, September 15, 1885; method of attaching soles to boots and shoes (expired September 15, 1902).
- No. 326,782, Raymond, September 22, 1885; nail for boots or shoes (expired September 22, 1902).
- No. 326,781, Raymond, September 22, 1885; nailing machine (expired September 22, 1902).
- No. 326,780, Raymond, September 22, 1885; nailing machine (expired September 22, 1902).
- No. 326,779, Raymond, September 22, 1885; heel attaching machine (expired September 22, 1902).
- No. 329,079, Raymond, October 27, 1885; heel nailing machine (expired October 27, 1902).
- No. 329,952, Raymond, November 10, 1885; sole or heel fastening (expired November 10, 1902).
- No. 329,951, Raymond 2d, November 10, 1885; heel nailing machine (expired November 10, 1902).
- No. 331,441, Raymond, December 1, 1885; heel nailing machine (expired December 1, 1902).
- No. 332,032, Allen, December 8, 1885; nailing machine for boots and shoes (expired December 8, 1902).
- No. 332,798, Henderson, December 22, 1885; heel nailing machine (expired December 22, 1902).
- No. 332,984, Allen, December 22, 1885; heel trimming machine (expired December 22, 1902).
- No. 335,242, Raymond, February 2, 1886; heel nailing machine (expired February 2, 1903).

- No. 335,241, Raymond, February 2, 1886; method of attaching heels (expired February 2, 1903).
- No. 336,332, Manley, February 16, 1886; boot or shoe edge trimming machine (expired February 16, 1903).
- No. 340,358, Raymond, April 20, 1886; boot or shoe sole (expired April 20, 1903).
- No. 340,690, Wright, April 27, 1886; last and support for the same (expired April 27, 1903).
- No. 341,169, Raymond, May 4, 1886; heel nailing machine (expired May 4, 1903).
- No. 341,689, Raymond, May 11, 1886; heel nailing machine (expired May 11, 1903).
- No. 342,039, Raymond, May 18, 1886; nailing machine (expired May 18, 1903).
- No. 342,501, Demary, May 25, 1886; heel nailing machine (expired May 25, 1903).
- No. 342,461, Raymond, May 25, 1886; spring heel blank (expired May 25, 1903).
- No. 342,371, Manley, May 25, 1886; trimming cutter for boots or shoes (expired May 25, 1903).
- No. 342,929, Raymond, June 1, 1885; nail making machine (expired June 1, 1903).
- No. 343,339, Raymond, June 8, 1886; heel nailing machine (expired June 8, 1903).
- No. 343,703, Demary, June 15, 1886; heel nailing machine (expired June 15, 1903).
- No. 343,728, Raymond, June 15, 1886; process of attaching heels (expired June 15, 1903).
- No. 344,136, Raymond, June 22, 1886; shoe nail (expired June 22, 1903).
- No. 344,499, Raymond, June 29, 1886; heel nailing machine (expired June 29, 1903).
- No. 344,985, Raymond, July 6, 1886; nail making machine (expired July 6, 1903).
- No. 345,449, Raymond, July 13, 1886; heel nailing machine (expired July 13, 1903).

- No. 345,920, Raymond, July 20, 1886; heel nailing machine (expired July 20, 1903).
- No. 346,124, Raymond, July 27, 1886; sole nailing machine (expired July 27, 1903).
- No. 346,125, Raymond, July 27, 1886; heel nailing machine (expired July 27, 1903).
- No. 346,137, Towns and Raymond, 2d, July 27, 1886; nail making and distributing machine (expired July 27, 1903).
- No. 346,607, Raymond, August 3, 1886; heel nailing machine (expired August 3, 1903).
- No. 347,061, Raymond, August 10, 1886; heel attaching machine (expired August 10, 1903).
- No. 347,062, Raymond, August 10, 1886; heel nailing machine (expired August 10, 1903).
- No. 347,063, Raymond, August 10, 1886; heel nailing machine (expired August 10, 1903).
- No. 347,514, Raymond, August 17, 1886; heel nailing machine (expired August 17, 1903).
- No. 347,482, Glidden, August 17, 1886; heel nailing machine (expired August 17, 1903).
- No. 347,960, Raymond, August 24, 1886; nail making and distributing machine (expired August 24, 1903).
- No. 348,091, Allen, August 24, 1886; heel loading machine (expired August 24, 1903).
- No. 348,092, Allen, August 24, 1886; heel loading machine (expired August 24, 1903).
- No. 348,689, Raymond, September 7, 1886; heel nailing machine (expired September 7, 1903).
- No. 350,051, Glidden, September 28, 1886; heel making machine (expired September 28, 1903).
- No. 353,883, Raymond, December 7, 1886; sole and heel nailing machine (expired December 7, 1903).
- No. 354,125, Gardner, December 14, 1886; heel nailing machine and method of attaching heels (expired December 14, 1903).
- No. 354,227, Raymond, December 14, 1886; spring heel blanks (expired December 14, 1903).

- No. 354,655, Raymond, December 21, 1886; heel nailing machine (expired December 21, 1903).
- No. 355,027, Raymond, December 28, 1886; heel and process of attaching the same (expired December 28, 1903).
- No. 355,556, Raymond, January 4, 1887; process of attaching heels to soles of boots or shoes (expired January 4, 1904).
- No. 355,839, Raymond, January 11, 1887; process of making headed nails (expired January 11, 1904).
- No. 355,840, Raymond, January 11, 1887; nail making and distributing machine (expired January 11, 1904).
- No. 356,209, Raymond, January 18, 1887; nail distributing machine (expired January 18, 1904).
- No. 356,519, Raymond, January 25, 1887; heel nail (expired January 25, 1904).
- No. 356,550, Raymond, January 25, 1887; heel nail and method of using same (expired January 25, 1904).
- No. 356,554, Raymond, January 25, 1887; heel nailing machine (expired January 25, 1904).
- No. 356,553, Raymond, January 25, 1887; heel nailing machine (expired January 25, 1904).
- No. 356,551, Raymond, January 25, 1887; nail strip and method of forming nails (expired January 25, 1904).
- No. 356,552, Raymond, January 25, 1887; nail making, distributing and driving device (expired January 25, 1904).
- No. 356,890, Raymond, February 1, 1887; rand and process of making same (expired February 1, 1904).
- No. 357,335, Raymond, February 8, 1887; method of laying out soles (expired February 8, 1904).
- No. 357,735, Raymond, February 15, 1887; method of forming heel rands (expired February 15, 1904).
- No. 358,298, Raymond, February 22, 1887; heel nailing machine (expired February 22, 1904).
- No. 358,695, Raymond, March 1, 1887; nail distributing and driving machine (expired March 1, 1904).
- No. 360,580, Gardner, April 5, 1887; process of attaching heels (expired April 5, 1904).

- No. 368,006, Raymond, August 9, 1887; process of attaching heels (expired August 9, 1904).
- No. 368,248, Soule, August 16, 1887; heel nailing machine (expired August 16, 1904).
- No. 373,409, McMullett, November 15, 1887; heel nailing machine (expired November 15, 1904).
- No. 374,419, Manley, December 6, 1887; heel trimming machine (expired December 6, 1904).
- No. 374,418, Manley, December 6, 1887; rotary cutter for trimming boot and shoe heels (expired December 6, 1904).
- No. 374,417, Manley, December 6, 1887; rotary cutter (expired December 6, 1904).
- No. 374,416, Manley, December 6, 1887; cutter head for boots or shoes (expired December 6, 1904).
- No. 374,387, Allen, December 6, 1887; machine for assorting nails (expired December 6, 1904).
- No. 374,894, Glidden, December 13, 1887; heeling machine (expired December 13, 1904).
- No. 374,885, Allen, December 13, 1887; burnishing machine (expired December 13, 1904).
- No. 374,892, Elliot, December 13, 1887; heel trimming machine (expired December 13, 1904).
- No. 375,209, Small, December 20, 1887; nail making and distributing machine (expired December 20, 1904).
- No. 375,458, Orr, December 27, 1887; heel nailing machine (expired December 27, 1904).
- No. 376,049, Small, January 3, 1888; method of attaching heels to boots or shoes (expired January 3, 1905).
- No. 375,913, Allen, January 3, 1888; heel loading machine (expired January 3, 1905).
- No. 376,208, Raymond, January 10, 1888; nail making machine (expired January 10, 1905).
- No. 376,754, Raymond, January 24, 1888; heel compressing machine (expired January 24, 1905).
- No. 376,908, Raymond, January 24, 1888; heel compressing machine (expired January 24, 1905).

- No. 377,172, Raymond, 2d, January 31, 1888; heel nailing machine (expired January 31, 1905).
- No. 377,284, Allen, January 31, 1888; heel trimming machine (expired January 31, 1905).
- No. 377,302, Glidden, January 31, 1888; heel trimming machine (expired January 31, 1905).
- No. 377,300, Glidden, January 31, 1888; heeling machine (expired January 31, 1905).
- No. 377,301, Glidden, January 31, 1888; heeling machine (expired January 31, 1905).
- No. 377,285, Allen, January 31, 1888; heel nailing and breasting machine (expired January 31, 1905).
- No. 377,577, Raymond, February 7, 1888; heel nailing and trimming machine (expired February 7, 1905).
- No. 377,958, Raymond, February 14, 1888; heel attaching machine (expired February 14, 1905).
- No. 378,216, Raymond, February 21, 1888; heel forming and attaching machine (expired February 21, 1905).
- No. 378,617, Raymond, February 28, 1888; heel nailing machine (expired February 28, 1905).
- No. 379,029, Raymond, March 6, 1888; method of forming and attaching heels (expired March 6, 1905).
- No. 378,859, Allen, March 6, 1888; machine for making flexible nail strips (expired March 6, 1905).
- No. 379,330, Raymond, March 13, 1888; nail distributing machine (expired March 13, 1905).
- No. 379,810, Raymond, March 20, 1888; heel nailing machine (expired March 20, 1905).
- No. 380,133, Raymond, March 27, 1888; method of flush nailing the heels of boots or shoes (expired March 27, 1905).
- No. 380,596, Raymond, April 3, 1888; nail making and distributing machine (expired April 3, 1905).
- No. 380,818, Raymond, April 10, 1888; nail making and distributing machine (expired April 10, 1905).
- No. 381,280, Raymond, April 17, 1888; machine for making, distributing and driving nails (expired April 17, 1905).

- No. 381,493, Cunningham, April 17, 1888; heel machine (expired April 17, 1905).
- No. 382,001.
- No. 382,121, Tyler and Merritt, May 1, 1888; heeling machine (expired May 1, 1905).
- No. 382,762, Glidden, May 15, 1888; heeling machine (expired May 15, 1905).
- No. 383,909, Prouty, June 5, 1888; pegging machine (expired June 5, 1905).
- No. 383,908, Prouty, June 5, 1888; nail strip (expired June 5, 1905).
- No. 383,907, Prouty, June 5, 1888; nail strip (expired June 5, 1905).
- No. 383,911, Raymond, June 5, 1888; nail feeding and distributing machine (expired June 5, 1905).
- No. 385,960, Raymond, July 10, 1888; slug for heel nailing (expired July 10, 1905).
- No. 386,538, Harrigan, July 24, 1888; rotary cutter (expired July 24, 1905).
- No. 386,656, Raymond, July 24, 1888; manufacture of loaded heel blanks (expired July 24, 1905).
- No. 388,544, Ellis, August 28, 1888; heeling machine (expired August 28, 1905).
- No. 384,343, Allen, June 12, 1888; heel nailing machine (expired June 12, 1905).
- No. 385,748, Merritt, July 10, 1888; heel nailing machine (expired July 10, 1905).
- No. 388,535, Merritt, August 28, 1888; manufacture of nail dies for heeling machine (expired August 28, 1905).
- No. 388,523, Benjamin, August 28, 1888; rotary cutter (expired August 28, 1905).
- No. 388,547, Fairfield, August 28, 1888; rotary cutter (expired August 28, 1905).
- No. 388,578, Packard, August 28, 1888; tread guide for cutter heads (expired August 28, 1905)

- No. 388,552, Glidden, August 28, 1888; rotary cutter (expired August 28, 1905).
- No. 388,548, Fairfield, August 28, 1888; rotary cutter (expired August 28, 1905).
- No. 389,077, Borne and Henderson, September 4, 1888; heel nail-ing machine (expired September 4, 1905).
- No. 398,846.
- No. 389,994, Washburn, September 26, 1888; heel filing machine (expired September 25, 1905).
- No. 391,124, Cummings and Coombs, October 16, 1888; machine for molding and compressing heels (expired October 16, 1905).
- No. 393,103, Glidden, November 20, 1888; heel trimming machine expired November 20, 1905).
- No. 393,104, Glidden, November 20, 1888; heel making machine (expired November 20, 1905).
- No. 394,298, Raymond, December 11, 1888; heel attaching ma-chine (expired December 11, 1905).
- No. 394,609, Raymond, December 18, 1888; nail making and dis-tributing machine (expired December 18, 1905).
- No. 394,610, Raymond, December 18, 1888; nail making and dis-tributing machine (expired December 18, 1905).
- No. 399,607, Glidden, March 12, 1889; method of manufacturing heels (expired March 12, 1906).
- No. 399,608, Glidden, March 12, 1889; heel cutting die (expired March 12, 1906).
- No. 399,631, Pope, March 12, 1889; heel nailing machine (ex-pired March 12, 1906).
- No. 399,777, Pope, March 19, 1889; heel nailing machine (ex-pired March 19, 1906).
- No. 400,788, Phelan, April 2, 1889; rotary cutter for trimming machines (expired April 2, 1906).
- No. 401,131, Carver, April 9, 1889; heel burnishing machine (ex-pired April 9, 1906).
- No. 401,619, Winter, April 16, 1889; top lift carrier for heel ing machines (expired April 16, 1906).

- No. 401,620, Winter, April 16, 1889; top-lift holder for heelng machines (expired April 16, 1906).
- No. 402,375, Winter, April 30, 1889; leather cutting tool (expired April 30, 1906).
- No. 402,376, Winter, April 30, 1889; trimming tool for boots or shoes (expired April 30, 1906).
- No. 402,435, Glidden, April 30, 1889; rotary trimming tool for boots or shoes (expired April 30, 1906).
- No. 403,747, Glidden, May 21, 1889; heel trimming machine (expired May 21, 1906).
- No. 405,598, Raymond, 2d, June 18, 1889; nail feeding implement (expired June 18, 1906).
- No. 406,183, Tripp, July 2, 1889; top lift holder (expired July 2, 1906).
- No. 406,184, Tripp, July 2, 1889; top lift holder (expired July 2, 1906).
- No. 406,582, Harrigan, July 9, 1889; heel trimmer (expired July 9, 1906).
- No. 408,173, Glidden, July 30, 1889; nail for boots or shoes (expired July 30, 1906).
- No. 408,895, Raymond, 2d, August 13, 1889; machine for feeding and attaching rands to boots and shoes (expired August 13, 1906).
- No. 409,372, Raymond, 2d, August 20, 1889; heelng nailing machine (expired August 20, 1906).
- No. 409,637, Glidden, August 20, 1889; heel nailing machine (expired August 20, 1906).
- No. 409,783, Glidden, August 27, 1889; top lift plate (expired August 27, 1906).
- No. 410,086, Glidden, August 27, 1889; heel trimming machine (expired August 27, 1906).
- No. 410,087, Glidden, August 27, 1889; heel trimming machine (expired August 27, 1906).
- No. 410,088, Glidden, August 27, 1889; heel trimming machine (expired August 27, 1906).

- No. 410,089, Glidden, August 27, 1889; sole trimming machine (expired August 27, 1906).
- No. 410,090, Glidden, August 27, 1889; heel trimming machine (expired August 27, 1906).
- No. 410,194, Raymond, 2d, September 3, 1889; heel nailing machine (expired September 3, 1906.)
- No. 410,195, Raymond, 2d, September 3, 1889; heel nailing machine (expired September 3, 1906.).
- No. 410,196, Raymond, 2d, September 3, 1889; heel nailing machine (expired September 3, 1906.).
- No. 410,358, Glidden, September 3, 1889; heel trimming machine (expired September 3, 1906).
- No. 410,675, Raymond, 2d, September 10, 1889; heel nail (expired September 10, 1906).
- No. 410,676, Raymond, 2d, September 10, 1889; heel nailing machine (expired September 10, 1906).
- No. 410,677, Raymond, 2d, September 10, 1889; heel nailing machine (expired September 10, 1906).
- No. 411,655, Glidden, September 24, 1889; heel trimming machine (expired September 24, 1906).
- No. 411,835, Pope, October 1, 1889; nail die for heeling machines (expired October 1, 1906).
- No. 412,414, Raymond, 2d, October 8, 1889; heel nailing machine (expired October 8, 1906).
- No. 412,896, Raymond, 2d, October 15, 1889; spring heel boot or shoe (expired October 15, 1906).
- No. 413,553, Raymond, 2d, October 22, 1889; heel forming and loading machine (expired October 22, 1906).
- No. 413,554, Raymond, 2d, October 22, 1889; nail machine (expired October 22, 1906).
- No. 413,555, Raymond, 2d, October 22, 1889; nail making and distributing machine (expired October 22, 1906).
- No. 413,959, Packard, October 29, 1889; heel trimming cutter (expired October 29, 1906).
- No. 413,963, Raymond, 2d, October 29, 1889; method of attaching heels to boots or shoes (expired October 29, 1906).

- No. 413,964, Raymond, 2d, October 29, 1889; nail making machine (expired October 29, 1906).
- No. 413,973, Small, October 29, 1889; heel nailing machine (expired October 29, 1906).
- No. 414,582.
- No. 414,040, Glidden, October 29, 1889; apparatus for assembling heel lifts (expired October 29, 1906).
- No. 414,448, Raymond, 2d, November 5, 1889; heel nailing machine (expired November 5, 1906).
- No. 414,952, Raymond, 2d, November 12, 1889; nail making, distributing and driving machine (expired November 12, 1906).
- No. 415,559, Raymond, 2d, November 19, 1889; heel machine (expired November 19, 1906).
- No. 415,560, Raymond, 2d, November 19, 1889; method of compressing and attaching heels (expired November 19, 1906).
- No. 427,308, Glidden, May 6, 1890; top lift holder (expired May 6, 1907).
- No. 439,060, Glidden and Elliott, October 21, 1890; heel trimming machine (expired October 21, 1907).
- No. 443,434, Freeman, December 23, 1890; edge trimming cutter (expired December 23, 1907).
- No. 446,383, Glidden and Elliott, February 10, 1891; heel machine (expired February 10, 1908).
- No. 446,885, Pope, February 24, 1891; heel nailing machine (expired February 24, 1908).
- No. 447,744, Winter, March 3, 1891; heel trimming machine (expired March 3, 1908).
- No. 448,310, Winter, March 17, 1891; heel trimming machine (expired March 17, 1908).
- No. 454,428, Glidden, June 16, 1891; heel shaping or compressing machine (expired June 16, 1908).
- No. 457,462, Glidden and Elliott August, 11, 1891; heeling nailing and trimming machine (expired August 11, 1908).
- No. 459,348, Glidden, September 8, 1891; rotary cutter for leather trimming machine (expired September 8, 1908).

- No. 461,448, Raymond, October 20, 1891; heel nailing machine (expired October 20, 1908).
- No. 461,510, Raymond, October 20, 1891; shoe nail (expired October 20, 1908).
- No. 461,853, Small, October 27, 1891; shoe nail (expired October 27, 1908).
- No. 464,165, Raymond, December 1, 1891; cam or gear and blank therefor (expired December 1, 1908).
- No. 464,255, Raymond, December 1, 1891; heel nailing machine (expired December 1, 1908).
- No. 464,196, Glidden, December 1, 1891; nail assorting machine (expired December 1, 1908).
- No. 464,991, Raymond, December 15, 1891; heel nailing machine (expired December 15, 1908).
- No. 465,029, Raymond, December 15, 1891; heel blank (expired December 15, 1908).
- No. 467,242, Small, January 19, 1892; heel machine (expired January 19, 1909).
- No. 467,237, Raymond, January 19, 1892; combination nail strip (expired January 19, 1909).
- No. 467,522, Raymond, January 26, 1892; method of making shoe slugs (expired January 26, 1909).
- No. 468,279, Webster, February 2, 1892; heel nailing machine (expired February 2, 1909).
- No. 468,957, Raymond, February 16, 1892; heel nailing machine (expired February 16, 1909).
- No. 473,874, Harrigan and Packard, April 26, 1892; rotary trimmer (expired April 26, 1909).
- No. 474,335, Demary, May 3, 1892; last (expired May 3, 1909).
- No. 474,146, Raymond, May 3, 1892; method of attaching heels to soles of boots or shoes (expired May 3, 1909).
- No. 474,407, Raymond, May 10, 1892; heelng machine (expired May 10, 1909).
- No. 474,408, Raymond, May 10, 1892; heel randing machine (expired May 10, 1909).

- No. 474,858, Raymond, May 17, 1892; combination strip of heel nails (expired May 17, 1909).
- No. 475,001, Raymond, May 17, 1892; method of attaching heels (expired May 17, 1909).
- No. 475,417, Raymond, May 24, 1892; nailing machine (expired May 24, 1909).
- No. 476,307, Raymond, June 7, 1892; shoe nail (expired June 7, 1909).
- No. 477,093, Wead, June 14, 1892; nail arranging device (expired June 14, 1909).
- No. 477,098, Brown and McCoy; June 14, 1892; heel nailing machine (expired June 14, 1909).
- No. 479,142, Raymond, July 19, 1892; heel nailing machine (expired July 19, 1909).
- No. 480,415, Raymond, August 9, 1892; heel loading machine (expired August 9, 1909).
- No. 480,741, Raymond, August 16, 1892; jack for heel nailing machine (expired August 16, 1909).
- No. 483,293, Webster, September 27, 1892; method of attaching heels to boots or shoes (expired September 27, 1909).
- No. 498,429, Glidden, May 30, 1893; nail assorting machine (expired May 30, 1910).
- No. 498,745, Fairfield, May 30, 1893; rotary cutter (expired May 30, 1910).
- No. 498,513, Glidden, May 30, 1893; heeling machine (expired May 30, 1910).
- No. 500,486, Glidden, June 27, 1893; heel nailing machine (expired June 27, 1910).
- No. 501,555, Winter, July 18, 1893; method of making rotary tooth cutters (expired July 18, 1910).
- No. 502,669, Glidden, August 1, 1893; heel nailing machine (expired August 1, 1910).
- No. 502,667, Glidden, August 1, 1893; heel compressing and loading machine (expired August 1, 1910).
- No. 502,668, Glidden, August 1, 1893; heel compressing and loading machine (expired August 1, 1910).

- No. 503,895, Benjamin and Simmons, August 22, 1893; nail separating and feeding devices (expired August 22, 1910).
- No. 503,895, Benjamin and Simmons, August 22, 1893; nail separating and feeding devices (expired August 22, 1910).
- No. 504,854, Webster, September 12, 1893; machine for breasting heels of boots or shoes (expired September 12, 1910).
- No. 505,074, Webster, September 12, 1893; heel attaching machine (expired September 12, 1910).
- No. 505,043, Glidden and Winter, September 12, 1893; heel trimming machine (expired September 12, 1910).
- No. 510,012, Elliott, December 5, 1893; heeling machine (expired December 5, 1910).
- No. 514,852, Krewson, February 13, 1894; jack for heel nailing machines (expired February 13, 1911).
- No. 518,917, Fairfield, April 24, 1894; rotary cutter (expired April 24, 1911).
- No. 528,805, Raymond, November 6, 1894; nail making, distributing and driving device (expired November 6, 1911).
- No. 530,046, Heys, November 27, 1894; heel pressing machine (expired November 27, 1911).
- No. 531,644, Raymond, 2d, January 1, 1895; nail feeding implement (expired January 1, 1912).
- No. 531,645, Raymond, January 1, 1895; nail feeding implement (expired January 1, 1912).

Comprising among said patents eighty-three on heel nailing, twenty-three on heel attaching, thirteen on heeling machines, fifteen on nails, sixteen on nail making, distributing and driving, besides 150 on miscellaneous machines and appliances.

Attention is also called to the fact that of said patents, over 300 in number, thirty expired prior to 1902, forty-six expired in 1902, thirty-nine expired in 1903, twenty-nine expired in 1904, fifty-four expired in 1905, fifty-one expired in 1906, fifteen expired in 1908, twenty-two expired in 1909, and that all but three of said total number of over 300 patents had expired prior to the filing of the petition herein.

(NOTE. Because of some of the numbers mentioned in the lease having apparently been transposed several of the patents apparently intended to have been referred to in the lease are omitted, as they could not be found.)

Said two bound volumes of patents are introduced as physical exhibits, and are marked "Plaintiff's Exhibits 251 A" and "251 B", and notice is given that the petitioner will not cause said physical exhibits to be reproduced unless upon the order or approval of the court or upon the request of counsel for either party, such request having the approval of the court.

[*Two bound volumes of patents as described above introduced in evidence, and marked "Plaintiff's Exhibit 251 A" and "Plaintiff's Exhibit 251 B".*]

Mr. WEBSTER. Petitioner offers in evidence group of sixteen patents, being the patents to which particular attention was called at the time Plaintiff's Exhibit 238 was introduced, being the sixteen patents, to which attention was called, found in the lease of the Consolidated & McKay Lasting Machine Company to Selz, Schwab & Company, dated December 17, 1898.

[*Group of patents as described introduced in evidence and marked "Plaintiff's Exhibit 252".*]

Mr. WEBSTER. Petitioner offers in evidence a certified copy of assignment from Sidney W. Winslow to McKay Shoe Machinery Company, dated June 1, 1900, recorded in United States Patent Office in Liber M-61, page 148, conveying to said McKay Shoe Machinery Company patent as follows:—

Patent issued to W. S. Hamm for stapling machine, No. 447,681, dated March 3, 1891.

Petitioner also offers in evidence copy of the patent referred to in said assignment.

[*Certified copy of assignment from Winslow to McKay, dated June 1, 1900, with copy of patent, introduced in evidence and marked "Plaintiff's Exhibit 253".*]

*Stipulation by counsel that the assignments of patents may be introduced as physical exhibits and not be reproduced and spread upon the record without request of counsel or order of the court.]*

**Mr. WEBSTER.** Petitioner offers in evidence as a physical exhibit a certified copy of assignment from Christian Dancel to Goodyear Shoe Machinery Company, of Connecticut, dated January 2, 1892, as recorded in the United States Patent Office, in Liber S-57, page 463, conveying to said Goodyear Company patents as follows:—

Patent to C. Dancel, for machine for winding bobbins, No. 420,441, dated February 4, 1890.

Patent issued to C. Dancel, for sewing machine, No. 449,036, dated September 8, 1891.

Petitioner also offers in evidence copies of the patents referred to in said assignment to go in as one exhibit in connection with the assignment, all being put in as a physical exhibit.

[*Certified copy of assignment from Christian Dancel to Goodyear Shoe Machinery Company, dated January 2, 1892, with copy of patents, introduced in evidence, and marked "Plaintiff's Exhibit 254".*] ]

The EXAMINER. Now, in order that there may be no misunderstanding, if these go in as physical exhibits, it is understood that there are to be obtained three copies identically like them for use in the District Court.

**Mr. FISH.** Can't we leave that for the present? He puts it in, it is not reproduced without request of counsel or court, and later we can enforce that request for three copies if we want them.

The EXAMINER. Nothing that has been put in this morning is to be reproduced.

**Mr. WEBSTER.** Except upon request of either party or by direction of the court. Is that right, Mr. Fish, Mr. Choate?

**Mr. CHOATE.** Certainly.

**Mr. WEBSTER.** The petitioner offers in evidence a certified copy of assignment from Campbell Machine Company to Goodyear Shoe Machinery Company dated November 19, 1897, as recorded in United States Patent Office in Liber Z-56, page 243, conveying to said Goodyear Shoe Machinery Company patents as follows:—

Patent issued to D. H. Campbell for sewing machine, No. 231,-954, dated September 7, 1880.

Patent issued to D. H. Campbell for sewing machine, No. 241,-608, dated May 17, 1881.

Patent issued to D. H. Campbell for sewing machine, No. 241,-609, dated May 17, 1881.

Patent issued to D. H. Campbell for sewing machine, No. 241,-610, dated May 17, 1881.

Patent issued to D. H. Campbell for sewing machine, No. 241,-611, dated May 17, 1881.

Patent issued to D. H. Campbell for sewing machine, No. 241,-612, dated May 17, 1881.

Patent issued to D. H. Campbell for sewing machine, No. 241,-613, dated May 17, 1881.

Patent issued to D. H. Campbell for wax thread sewing machine, No. 253,157, dated January 31, 1882.

Patent issued to A. B. Fowler for burnishing and trimming machine, No. 352,864, dated November 16, 1886.

Patent issued to E. C. Ross for presser foot and welt guide combined, No. 366,259, dated July 12, 1887.

Patent issued to A. B. Fowler for heel burnishing machine, No. 372,612, dated November 1, 1887.

Patent issued to D. H. Campbell for wax thread sewing machine, No. 374,934, dated December 20, 1887.

Patent issued to D. H. Campbell for machine for waxing thread and winding it into cops, No. 374,935, dated December 20, 1887.

Patent issued to D. H. Campbell for take-up device for wax thread sewing machines, No. 374,936, dated December 20, 1887.

Patent issued to D. H. Campbell for sewing machine shuttle, No. 374,937, dated December 20, 1887.

Patent issued to A. B. Fowler for burnishing machine, No. 377,-826, dated February 14, 1888.

Patent issued to Fowler and Warren for burnishing or trimming tool, No. 384,902, dated June 19, 1888.

Patent issued to W. C. Evans for heel burnishing machine, No. 385,702, dated July 10, 1888.

Patent issued to G. Ambon, Jr., for wax thread sewing machine, No. 388,752, dated August 28, 1888.

Patent issued to J. H. Ryder for heel beading machine, No. 388,790, dated August 28, 1888.

Patent issued to W. F. Nesmith for presser foot for sewing machine, No. 391,981, dated October 30, 1888.

Patent issued to Fowler and Warren for heel finishing machine, No. 396,690, dated January 22, 1889.

Patent issued to J. S. Turner for shoe welt sewing machine, No. 407,974, dated July 30, 1889.

Patent issued to G. Ambon, Jr., for combined welt and upper guide, No. 407,987, dated July 30, 1889.

Patent issued to D. H. Campbell for machine for waxing thread and winding the same on bobbins, No. 409,270, dated August 20, 1889.

Patent issued to E. P. Arnold for thread controlling device, No. 421,889, dated February 25, 1890.

Patent issued to A. B. Fowler for rotary cutter and trimmer, No. 425,214, dated April 8, 1890.

Patent issued to G. Ambon, Jr., for wax thread sewing machine, No. 425,722, dated April 15, 1890.

Patent issued to Fowler, Warren and Evans for heel burnishing machine, No. 438,997, dated October 21, 1890.

Patent issued to C. E. Wheeler for sewing machine, No. 446,398, dated February 10, 1891.

Patent issued to Fowler and Warren for heel burnishing machine, No. 452,345, dated May 12, 1891.

Patent issued to D. H. Campbell for wax pot for use in machines for waxing thread, No. 456,536, dated July 21, 1891.

Patent issued to G. E. Warren for scouring roll, No. 462,886, dated November 10, 1891.

Patent issued to Metcalf and Godding for sewing machine, No. 469,374, dated February 23, 1892.

Patent issued to Fowler and Warren for heelng trimming machine, No. 503,475, dated August 15, 1893.

Patent issued to E. P. and E. F. Arnold for welt guiding device for shoe sewing machine, No. 510,150, dated December 5, 1893.

Patent issued to J. W. Hynes for box loop attachment for sewing machine, No. 510,792, dated December 12, 1893.

Patent issued to Fowler and Warren for sewing machine, No. 549,353, dated November 5, 1895.

Patent issued to Fowler and Warren for shuttle driving mechanism for sewing machine, No. 560,704, dated May 26, 1896.

Patent issued to D. McNiven for buffing or polishing wheel, No. 577,111, dated February 16, 1897.

Patent issued to G. E. Warren for sewing machine, No. 583,522, dated June 1, 1897.

Patent issued to S. H. Dyer for shuttle for sewing machine, No. 583,793, dated June 1, 1897.

Patent issued to S. H. Dyer for sewing machine, No. 584,543, dated June 15, 1897.

Petitioner also offers in evidence copies of the patents referred to in said assignment.

[*Certified copy of assignment from Campbell Machine Company to Goodyear Shoe Machinery Company, dated November 19, 1897, with copies of patents, introduced in evidence, and marked "Plaintiff's Exhibit 255".*]

Mr. WEBSTER. The petitioner offers in evidence a certified copy of assignment from Sidney W. Winslow to McKay Shoe Machinery Company, dated March 15, 1898, as recorded in United States Patent Office in Liber B-58, page 5, conveying to said McKay Shoe Machinery Company patents as follows:—

Patent issued to A. B. Smith for stapling machine, No. 335,154, dated February 2, 1886.

Patent issued to W. S. Hamm for stapling machine, No. 521,369, dated June 12, 1894.

Patent issued to Hamm and Eaton for machine for making and driving metallic fastenings, No. 571,227, dated November 10, 1896.

Petitioner also offers in evidence copies of the patents referred to in said assignment.

[*Certified copy of assignment from Winslow to McKay Shoe Machinery Company dated March 15, 1898, with copies of patents, introduced in evidence, and marked "Plaintiff's Exhibit 256".*]

Mr. WEBSTER. The petitioner offers in evidence a certified copy of assignment from John R. Nolan to Consolidated & McKay Lasting Machine Company, dated March 23, 1898, as recorded in United States Patent Office in Liber Y-57, page 38, conveying to said Consolidated & McKay Lasting Machine Company patents as follows: —

Patent issued to J. Q. A. Houghton for lasting machine, No. 385,557, dated July 3, 1888.

Petitioner also offers in evidence copy of the patent referred to in said assignment.

[*Certified copy of assignment from John R. Nolan to Consolidated & McKay Lasting Machine Company dated March 23, 1898, with copy of patent, introduced in evidence, and marked "Plaintiff's Exhibit 257".*]

Mr. WEBSTER. The petitioner offers in evidence a certified copy of assignment from Gordon McKay to Consolidated & McKay Lasting Machine Company, dated November 12, 1897, as recorded in United States Patent Office in Liber P-55, page 498, conveying to said Consolidated & McKay Lasting Machine Company patents as follows: —

Patent issued to M. J. Ferren for instep holder for shoes, No. 233,844, dated November 2, 1880.

Patent issued to McKay and Fairfield for instep holder, No. 234,488, dated November 16, 1880.

Patent issued to H. P. Fairfield for lasting machine, No. 234,-912, dated November 30, 1880.

Patent to H. G. Thompson for upper for boots and shoes, No. 237,638, dated February 8, 1881.

Patent issued to H. P. Fairfield for boot and shoe upper, No. 240,585, dated April 26, 1881.

Patent issued to L. R. Blake for machine for lasting boots and shoes, No. 241,524, dated May 17, 1881.

Patent issued to G. McKay for expanding last, No. 245,303, dated August 9, 1881.

Patent issued to G. McKay for lasting machine, No. 251,452, dated December 27, 1881.

Patent issued to Thompson and Mower for lasting machine, No. 251,487, dated December 27, 1881.

Patent issued to E. P. Richardson for lasting machine No. 311,-850, dated February 3, 1885.

Patent issued to E. P. Richardson for lasting machine, No. 311,-851, dated February 3, 1885.

Patent issued to C. W. Glidden for lasting machine, No. 248,-448, dated October 18, 1881.

Patent issued to McKay and Fairfield for lasting machine, No. 250,450, dated December 6, 1881.

Patent issued to W. E. Fisher for lasting machine, No. 251,205, dated December 20, 1881.

Patent issued to C. W. Glidden for lasting machine, No. 251,-430, dated December 27, 1881.

Petitioner also offers in evidence copies of the patents referred to in said assignment.

[*Certified copy of assignment from Gordon McKay to Consolidated & McKay Lasting Machine Company, dated November 12, 1897, with copies of patents, introduced in evidence, and marked "Plaintiff's Exhibit 258".*]

Mr. WEBSTER. It being uncertain as to whether patents now to be introduced have been introduced heretofore, it is agreed that if it is found they have been heretofore introduced these exhibits may be withdrawn; is that right?

Mr. CHOATE. Yes.

Mr. WEBSTER. Petitioner offers in evidence group of patents on the list of patents read into the record by Mr. Howard, the inventions of which patents were, as petitioner understands, stated by Mr. Howard, incorporated in machines and which patents expired after the organization of the United Company and before the filing of the petition, such patents being as follows:—

Patent to C. Dancel, sole sewing machine, dated July 19, 1887, No. 366,935.

Patent to French and Meyer, sewing machine, dated October 8, 1889, No. 412,703.

Patent to French and Meyer, shuttle for sewing machines, dated April 8, 1890, No. 424,966.

Patent to French and Meyer, sole sewing machine, dated April 25, 1892, No. 473,870.

Patent to French and Meyer, sole sewing machine, dated May 10, 1892, No. 474,774.

[*Group of patents described above introduced in evidence, and marked "Plaintiff's Exhibit 259".*]

Mr. WEBSTER. The petitioner also offers under the same heading copies of patents as follows:—

Patent to French, sole sewing machine, dated May 12, 1885, No. 317,759.

Patent to French and Meyer, shoe sewing machine, dated October 8, 1889, No. 412,704.

Patent to Briggs, method of forming chain stitches, dated October 20, 1891, No. 461,793.

Patent to LaChapelle, tension device for sewing machine, dated December 20, 1892, No. 488,505.

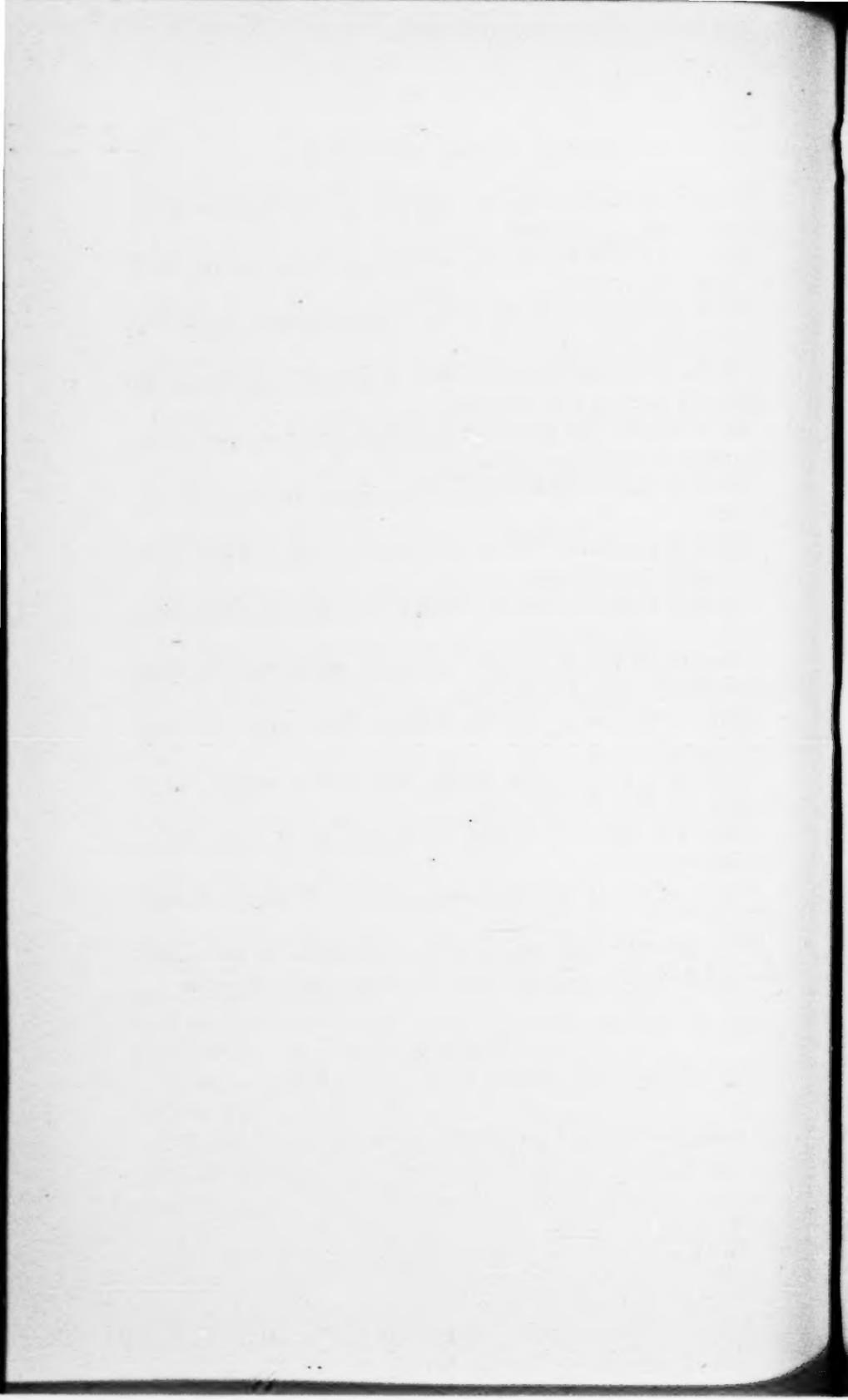
Patent to H. E. Cole, sewing machine, dated April 11, 1893, No. 493,452.

Patent to E. P. and H. H. Arnold, shoe sewing machine, dated October 31, 1893, No. 507,873.

Patent No. 518,911 — which is out of print and I would like to furnish it hereafter.

[*Group of patents described above marked "Plaintiff's Exhibit 260".*]

Mr. WEBSTER. As at present advised this closes the petitioner's case in reference to the presenting of evidence under the order.



## EVIDENCE FOR DEFENDANTS.

TAKEN PURSUANT TO ORDER OF COURT, ENTERED JUNE 27, 1913,  
BEFORE ME.

CHARLES K. DARLING,  
*Special Examiner.*

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BOSTON MASS., October 6, 1913.

Present :

ALLEN WEBSTER, Esq., *Special Assistant to the Attorney General,*  
*of Counsel for Complainant:*

FREDERICK P. FISH, Esq., and CHARLES F. CHOATE, Jr., Esq.,  
*of Counsel for Defendants.*

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## DEPOSITION OF NELSON W. HOWARD.

*Direct Examination by CHARLES F. CHOATE, Jr., Esq., of Counsel  
for Defendants.*

*Int.* 1. State your full name, your residence and occupation, Mr. Howard.

*Ans.* Nelson W. Howard ; Boston ; I am a member of the bar, in charge of the patent department of the United Shoe Machinery Company.

*Int.* 2. State how long you have been in practice, the character of your practice and your experience generally.

*Ans.* Immediately after graduating from the Harvard Law School in 1895 I became connected with the firm of Fish, Richardson & Storror, now named Fish, Richardson, Herrick & Neave. I remained with that firm for nearly three years. During that time I was exclusively engaged in work relating to patents, and a considerable portion of my time was spent in connection with litigation involving shoe machines and shoe machinery patents. On September 1, 1898, I became connected with the McKay Shoe Machinery Company, taking charge of the patent interests of that company. When the United Shoe Machinery Company was formed

in February, 1899, I assumed a similar position with that company, and from that date to the present time I have been in charge of the patent department of that company. During the period of about fifteen years since I became connected with the McKay Shoe Machinery Company my time has been devoted exclusively to matters relating to machines and methods used in the manufacture of shoes and to patents and patent applications on such machines and methods. My duties have comprised largely the comparison of the claims of patents and of applications for patents with the structures of machines. My duties have required frequent visits to shoe factories, and the observation and study of machines as they are used in the manufacture of shoes.

*Int. 3. Please state fully your familiarity with the art and development of shoe machinery.*

*Ans.* In connection with the prosecutions of applications for patents and general investigations of questions of infringement and anticipations I have had occasion to become familiar, in the course of the period of fifteen years during which I have been engaged upon this work, with the patents which have been granted upon shoe machines and methods for use in the manufacture of shoes from the beginning of the art.

*Int. 4. In connection with the same work and during the same period, have you had occasion to follow and keep yourself familiar with the mechanical development of the art?*

*Ans.* In order to do properly the work which I have had to do, it has been indispensable that I follow and be constantly familiar with the development of the art from day to day.

*Int. 5. To what extent have you been, and are you now, familiar with the development of the manufacture of shoe machinery by the United Shoe Machinery Company, particularly in connection with the work carried on at its factory, and by conference or consultations with its engineers and inventors?*

*Ans.* A proper discharge of my duties has required that I be in constant association with the mechanical experts and with the inventors employed by the United Shoe Machinery Company, and that I be constantly familiar with the experimental work which is

being carried on in improving the machines and developing new machines, and that I frequently examine experimental machines in their course of development in the company's experimental department at its manufacturing plant in Beverly.

*Int.* 6. State how familiar you are and have been with the commercial development of the machines put out by the United Company and their improvements and developments from time to time.

*Ans.* Again, the proper discharge of my duties has required that I become thoroughly familiar not only with machines as they have been constructed and used in the past but also with each improvement made upon the machines and with every new machine which has superseded an old machine. The obtaining of patents for all such improvements and new machines has been one of my principal duties, and familiarity both with the prior art and the improvements which were the subjects-matter of patent applications was of course indispensable to proper preparation and prosecution of such applications.

*Int.* 7. Have you, at our request, prepared a list of some of the improved machines put out by the United Shoe Machinery Company showing as to each machine the date when it was first put out by that company (to avoid unduly encumbering the record, I did not ask you to list all such machines), and if you have prepared such a list will you please produce it?

*Ans.* I have prepared such a list and do now produce it. I read the list:—

October 3, 1913.

**SOME OF THE IMPORTANT MACHINES PUT OUT BY THE UNITED  
SHOE MACHINERY COMPANY.**

	Department	First Put Out by U. S. M. Co.
Assembling machine, Rex	Pulling over	Sept. 1905
Assembling machine, model E, Rex	Pulling over	Aug. 1910
Assembling machine, Rex turn shoe	Pulling over	Feb. 1912
Assembling spindle	Pulling over	Sept. 1904
Beading machine, Columbia	General	Nov. 1907
Beating and slashing machine, Good-year welt	Goodyear	Nov. 1904

Beveling machine, model B, Champion strip	General	Nov. 1909
Blacking machine, model A, Crest heel	General	Sept. 1908
Blacking machine, model B, Crest heel	General	May 1911
Building machine, Pyramid heel, models B, C, D	General	June 1909
Burnishing machine No. 2, Goodyear impression stitch	Goodyear	April 1908
Cementing machine, Hub lining, models E and F	General	May 1908
Cementing machine, model X, Stanbon channel	General	April 1911
Cementing machine, Star channel, models A and C	General	Oct. 1906
Cementing machine, Star channel, model D	General	April 1912
Channeling machine, Economy insole	Goodyear	May 1905
Channeling machine, Goodyear (insole and turn)	Goodyear	Feb. 1899
Channeling machine, Goodyear Universal (turn work)	Goodyear	Nov. 1908
Channeling machine, Goodyear Universal (welt work)	Goodyear	Sept. 1907
Clicking machine, model C, Ideal	General	Mar. 1908
Clinch machine, Universal double	Metallic	Nov. 1899
Compressing machine, model No. 4, Automatic heel	Heeling	Sept. 1900
Cutting and scoring machine, insole, models D and E	General	Dec. 1911
Embossing machine, model B	General	Jan. 1911
Eyeleting machine, Cameo foot power	Eyeleting	April 1910
Eyeleting machine, Duplex	Eyeleting	July 1902
Eyeleting machine, Universal	Eyeleting	Nov. 1902
Fastening machine, model D, Staple	Metallic	Jan. 1907
Finishing machine, USMC buttonhole	Fitting room	Jan. 1913
Flexible innersole machine, model X, Goodyear	Goodyear	Jan. 1911

Flexible Insole machine, Gem	Goodyear	Sept. 1900
Fudge Edge machine, Goodyear	Goodyear	May 1908
Generating machine, Goodyear pattern	Goodyear	Mar. 1911
Grooving and beveling machine, Good- year power welt	Goodyear	July 1906
Heel-breasting machine, model B, Imperial	General	July 1902
Indenting and burnishing machine, Goodyear welt	Goodyear	July 1905
Jointing machine, Goodyear	Goodyear	Nov. 1910
Lacing machine, Ensign, models A and B	Fitting room	Feb. 1906
Lasting machine, Consolidated hand method	Lasting	Feb. 1899
Lasting machine, McKay & Copeland	Lasting	Feb. 1899
Lasting machine, No. 5 U. S. M. C.	Lasting	Jan. 1908
Laying machine, model A, Apex welt	General	Feb. 1910
Laying machine, model X, Apex welt	General	Feb. 1911
Laying machine, Goodyear channel	Goodyear	Feb. 1899
Laying machine, Goodyear improved sole, models B and C	Goodyear	Dec. 1910
Laying machine, Goodyear improved sole, twin	Goodyear	Dec. 1906
Leveling machine, model A, Atlas	General	Sept. 1903
Leveling machine, Goodyear automatic sole, models A, B, C	Goodyear	Feb. 1899
Leveling machine, Goodyear welt and turn (turn work)	Goodyear	June 1906
Leveling machine, Goodyear welt and turn (welt work)	Goodyear	June 1906
Leveling machine, Hercules, models A and B	General	Apr. 1903
Leveling and flexing machine, model N, Shin	General	Feb. 1906
Loading and attaching machine, McKay automatic heel	Heeling	Feb. 1899

Loading and attaching machine, model B, McKay automatic heel	Heeling	Nov. 1910
Lockstitch machine, model K, Good-year outsole rapid	Goodyear	May 1910
Lockstitch machine, model M, Good-year outsole rapid	Goodyear	Jan. 1912
Making machine, buttonhole	Fitting room	Jan. 1913
Marker, improved Star sole	General	Oct. 1910
Marking machine, model C, Paragon vamp	General	May 1906
Molding machine, American twin sole, models B and C	General	May 1907
Molding machine, Goodyear power	Goodyear	June 1910
Molding machine, stitch down upper	General	Nov. 1907
Nailing machine, Alpha wood heel	Heeling	Sept. 1907
Nailing machine, American Lightning	Heeling	Feb. 1899
Nailing machine, Loose	Metallic	Feb. 1899
Nailing machine, Hungarian	Metallic	Feb. 1899
Nailing machine, No. 2, Loose	Metallic	1909
Nurling machine, model A	Heeling	July 1901
Opening machine, model C, Apex channel	General	July 1906
Pegging machine, Davey	Metallic	Feb. 1899
Perforating machine, model B, Royal	General	Oct. 1904
Perforating machine, model M, Stanbon	General	Apr. 1911
Pincer, U. S. M. C. bench	General	1911
Pounding machine, model E, Rex	Pulling over	1904
Pounding machine, model C, Rex rotary	Pulling over	Mar. 1912
Pounding and beating up machine, model A, Rex rotary	Pulling over	Mar. 1912
Pounding and trimming machine, model B, Rex rotary	Pulling over	July 1908
Pricking machine, Premier heel	Heeling	July 1903
Pulling machine, Goodyear insole tack	Goodyear	Feb. 1909
Pulling machine, Goodyear upper tack	Goodyear	Nov. 1912

Pulling and resetting machine, Goodyear tack	Goodyear	Nov. 1910
Pulling and trimming machine, insole tack and turn shoe	Goodyear	Dec. 1911
Pulling over machine, model A, Rex	Pulling over	Sept. 1899
Pulling over machine, model B, Rex	Pulling over	July 1910
Pulling over machine, model C, Rex	Pulling over	Mar. 1911
Punching machine, model A, Royal tip	General	May 1911
Quilting machine, Spatter	Metallic	Feb. 1899
Reducing machine, Goodyear outsole channel shank	Goodyear	Apr. 1909
Reducing machine, model H, rotary feather edge and shank	General	Nov. 1904
Reinforcing machine, Economy insole	Goodyear	Sept. 1904
Repairing machine, model A, patent leather	General	Aug. 1912
Rounding machine, Goodyear heel seat	Goodyear	Aug. 1909
Rounding machine, Planet sole, models C and D	General	Nov. 1901
Rounding and channeling machine, Goodyear Universal	Goodyear	Feb. 1899
Rounding and channeling machine, model E, Goodyear Universal	Goodyear	Sept. 1910
Rounding and sanding machine, Goodyear heel seat	Goodyear	Jan. 1913
Sanding machine, model AL, tap and sole	Heeling	June 1908
Scarfing machine, model N, tap	General	Sept. 1910
Scalloping machine, model B, top piece	General	May 1905
Scouring machine, model X, heel	General	Nov. 1911
Screw machine, Rapid Standard	Metallic	Feb. 1899
Screw machine, model B, Rapid Standard	Metallic	Jan. 1912
Separating machine, Hadaway Stitch	Goodyear	Feb. 1899
Shoe machine, Goodyear welt and turn	Goodyear	Feb. 1899

Shoe machine, model G, Goodyear welt and turn	Goodyear	Oct. 1908
Shoe machine, model K, Goodyear welt and turn	Goodyear	June 1911
Skiving machine, Amazeen	General	July 1905
Skiving machine, model A, Champion heel lift	General	Sept. 1907
Skiving machine, model A, Champion shank	General	Jan. 1909
Skiving machine, Eros rand	Heeling	Aug. 1906
Skiving machine, Goodyear shank welt	Goodyear	Jan. 1904
Skiving machine, Goodyear Universal shank	Goodyear	Feb. 1899
Skiving machine, Pluma, models C and D	General	Apr. 1909
Skiving and finishing machine, Mon- arch counter and box toe	Heeling	Jan. 1903
Skiving or Rand splitting machine, model C, Apex tap	General	Jan. 1908
Slashing machine, XX welt	General	Feb. 1911
Slugging machine, Universal	Metallic	Feb. 1899
Snipping machine, Goodyear insole toe	Goodyear	May 1911
Softening machine, toe, models C and D	General	Aug. 1911
Softening machine, toe, model E	General	Apr. 1912
Splitting machine, Empire, models C and D	General	Sept. 1908
Splitting machine, Summit	General	Apr. 1903
Stamping machine, model C, Eagle sole	General	Mar. 1910
Stamping machine, model C, Eagle Upper	General	Mar. 1910
Stamping machine, Regent, models B and C	General	May 1903
Stapling machine, Goodyear upper	Goodyear	Oct. 1910
Stapling machine, model B, Goodyear upper	Goodyear	1912
Sticking machine, model B, Shank piece	General	Sept. 1911

Stitching machine, Economy insole	Goodyear	Oct. 1909
Tacking machine, model A, Grip	Metallic	Feb. 1899
Tacking machine, model B, Grip	Metallic	1909
Tacking machine, No. 1 U. S. M. C. insole	Metallic	1910
Tacking machine, Power welt	Metallic	Feb. 1899
Trimming machine, Goodyear insole heel seat	Goodyear	Jan. 1911
Trimming machine, Goodyear insole heel seat, model B	Goodyear	Oct. 1912
Trimming machine, Goodyear Universal inseam	Goodyear	Feb. 1899
Trimming machine, model B, Rex toe	Pulling over	Oct. 1904
Trimming machine, model A, Rex upper	Pulling over	Dec. 1905
Trimming machine, model H, Rex upper	Pulling over	June 1908
Trimming machine, spring heel	Heeling	Feb. 1899
Trimming machine, Ultima heel	Heeling	Dec. 1904
Turning machine, Gem lip	Goodyear	May 1899
Turning machine, Goodyear forepart	Goodyear	Apr. 1901
Turning machine, Goodyear heel	Goodyear	Apr. 1901
Turning machine, Goodyear lip	Goodyear	Feb. 1899
Turning machine, Goodyear welt edge	Goodyear	Dec. 1901
Turning and slashing machine, Good- year lip	Goodyear	Jan. 1912
Wheeling machine No. 2, Goodyear impression stitch	Goodyear	June 1908

#### WELT AND TURN SEWING MACHINES.

*Int. 8. What is the function of a welt and turn machine in the manufacture of shoes?*

*Ans.* A welt and turn machine is used to perform two different operations in the manufacture of shoes. In the manufacture of welt shoes it is employed to attach the welt and upper to the insole, and this is its principal use. It is also used to secure together the

upper and sole of a turn shoe. In this operation it sews the upper to the sole while the turn shoe is inside out.

*Int.* 9. What was the first patent definitely directed to a welt and turn machine of this general character?

*Ans.* The first patent which I recall, directed to a machine for attaching the welt and upper of a welt shoe to the insole, is patent No. 34,413, February 18, 1862, Destouy. This patent was reissued on September 7, 1869, as No. 3635. A typical claim of the reissue patent is claim 4, which is as follows: —

“4. A sewing mechanism, adapted to units, by machinery, the upper, welt, and sole, substantially as described, so as to produce a machine-made welted boot or shoe.”

This Destouy machine was improved by the structure shown in patent No. 93,731, August 17, 1869, Mills, and by the improvements shown in patent No. 170,547, November 30, 1875, Goodyear and Hadley.

The improvements of patent No. 93,731 transformed the machine into a chain-stitch machine, the Destouy machine having been a lockstitch machine. The improvements of patent No. 170,547 reorganized the machine so that it laid the chain on the welt instead of in the channel. A typical claim of the Goodyear and Hadley patent No. 170,547 is the first, which is as follows: —

“1. A sewing mechanism for boots and shoes, in which the channel gauge and back gauge were combined with and arranged relatively to a circularly curved needle, substantially as set forth, so that the operation of sewing therewith places the loop or chain stitch on the outside of the seam, instead of in the channel in the sole.”

The machine of this Goodyear and Hadley patent was put into commercial use and was extensively used for some years.

#### SHOE MACHINE: GOODYEAR WELT AND TURN.

*Int.* 10. Mr. Chapman has testified that the subjects-matter of certain Letters Patent, namely, No. 412,704, October 8, 1889, to French and Meyer; No. 488,505, December 20, 1892, to LaChapelle, and No. 518,911, April 24, 1894, to Briggs, was embodied in the welt and turn machine illustrated in Complainant's Exhibit

No. 209, which was the welt and turn machine put out by the Goodyear Shoe Machinery Company before February 1, 1899, and by the United Company thereafter. State if there were other patents of the United Company, the subjects-matter of which were embodied in this machine.

*Ans.* In addition to the patents named by Mr. Chapman, the welt and turn sewing machine as put by the Goodyear Shoe Machinery Company just before February, 1899, and by the United Shoe Machinery Company after that date in 1899, embodied the mechanism shown in the drawings, described in the specification and set forth in the claim of patent No. 561,386, June 2, 1896, French. The mechanism set forth in the claim of this patent comprised means for heating the looper of a welt and turn sewing machine, and the welt and turn sewing machine of 1899, and as put out before and after that date, embodied such means. It was important that a welt and turn sewing machine be provided with means for keeping the looper hot, because if the looper were cold it would chill the wax of the thread as the thread passed through it and would cause the thread to become hard and brittle, thus interfering with the operation of the stitch-forming mechanism and with the setting of the stitch, and causing frequent breakage of the thread. Before such means was incorporated in welt and turn sewing machines frequent difficulty was occasioned in the failure to keep the looper in the proper heated condition. So much difficulty was encountered in this connection with machines as used before the mechanism of this French patent No. 561,386 was incorporated in the machine that the operation of a machine was frequently interfered with seriously by the opening of a window near the machine. I have examined the welt and turn sewing machine No. 228 which was referred to by Mr. Chapman, and which is shown in the photograph Plaintiff's Exhibit No. 232, in the factory of the Commonwealth Shoe & Leather Company at Whitman, Massachusetts, and I find that that machine embodies the means set forth in the claim of this French patent No. 561,386, June 2, 1896.

*Int.* 11. State whether or not the Goodyear welt and turn machine of 1899 has continued to be the standard machine of the

United Company. If not, what machines have since been designed and put into use? What were their relations to the machine of 1899? When were they put into use? And if they embodied the subject-matter of any Letters Patent of the United Company, name the patents. State also to what extent, if at all, these new machines were an advancement in the art.

#### SEWING MACHINE: GOODYEAR UNIVERSAL INSEAM.

*Ans.* Just before the formation of the United Shoe Machinery Company in February, 1899, the Goodyear Shoe Machinery Company had been experimenting with a view to producing a lockstitch welt-sewing machine. About that time shoe manufacturers thought they desired to attach the upper and welt of welt shoes to the insole by a machine which would sew with a lockstitch instead of the chainstitch of the welt and turn sewing machine of 1899. In recognition of this desire on the part of shoe manufacturers and in order to satisfy it the United Company continued the experimental work which had been begun by the Goodyear Shoe Machinery Company looking toward the production of a lockstitch welt-sewing machine, and in June, 1899, first put out for commercial use the machine which had been produced as the result of that experimenting.

That machine was known officially as "Sewing Machine Good-year Universal Inseam". I might add that the reason why manufacturers at that time thought that they preferred to attach the welt and upper on a lockstitch sewing machine was that the stitch which is made by a lockstitch machine more nearly resembles the stitch which is made by the hand workman in sewing the welt and upper to the insole.

This lockstitch welt-sewing machine as first put out in June, 1899, embodied mechanisms shown in the drawings, described in the specifications and set out in the claims of the following patents, all owned or controlled by the United Shoe Machinery Company:—

No. 366,935, July 19, 1887, Dancel.

No. 412,703, October 8, 1889, French and Meyer.

No. 495,452, April 11, 1893, Cole.

No. 583,522, June 1, 1897, Warren.

No. 705,063, July 22, 1902, French and Meyer (application filed October 14, 1897).

No. 790,790, May 23, 1905, French and Meyer (application filed December 6, 1898).

No. 732,729, July 7, 1903, French and Meyer (application filed December 21, 1898).

No. 705,062, July 22, 1902, French and Meyer (application filed November 23, 1899).

In 1900 improvements were incorporated in the machine which are shown in the drawings, described in the specifications and set forth in the claim of patents —

No. 781,596, January 31, 1905, French and Meyer (application filed March 10, 1900).

No. 1,030,742, June 25, 1912, Meyer (application filed June 16, 1902).

Manufacturers of shoes did not use this lockstitch sewing machine long before they discovered that they did not, after all, wish to attach the welt and upper of a welt shoe by means of a lockstitch sewing machine. They found that it was impossible to secure the tight inseam, which is indispensable in the inseam of a welt shoe. Only seventy-three of these machines were put in use by shoe manufacturers.

After the failure of the lockstitch welting machine the United Shoe Machinery Company concentrated its efforts upon experiments which were already under way looking toward the production of a high-speed chainstitch welting machine. The inventors who were working upon this experimental machine believed that the machine which they had in mind would be capable of a much higher speed than the welt and turn sewing machine which was then the standard welt sewing machine; that is, the same machine which was being put out in February, 1899.

It was also believed that the organizations which the inventors had in mind would enable a machine constructed upon those lines to sew the welt and upper to an insole much thinner and lighter

than insoles which had to be used with the commercial machine at that time; that is, the 1899 machine.

The difference in expense between such an insole as was required by the 1899 machine, and the light, thin insole which it was anticipated could be handled by the proposed new machine, would have effected a substantial economy without any sacrifice in the quality of the shoe.

The experimental work to which I have referred was carried on very aggressively, and finally a commercial machine was produced and was first supplied to manufacturers in July, 1902, the machine being known officially as "Shoe Machine, Goodyear Welt and Turn, Model E".

#### SHOE MACHINE — MODEL E, GOODYEAR WELT AND TURN.

When the machine was put out, it incorporated mechanisms shown in the drawings, described in the specifications and set forth in the claims of the following patents, all owned or controlled by the United Shoe Machinery Company:—

No. 461,793, October 20, 1891, Briggs.

No. 488,505, December 20, 1892, LaChapelle.

No. 507,873, October 31, 1893, Arnold.

No. 884,537, October 15, 1901, Briggs.

No. 884,538, October 15, 1901, Briggs.

No. 687,719, December 3, 1901, Briggs.

No. 679,409, July 30, 1901, Alley.

The machine as first put out also embodied mechanisms which were set forth in the claims of applications which were then pending, upon which were subsequently granted the following patents:

No. 732,729, July 7, 1903, French and Meyer.

No. 1,030,742, June 25, 1912, Meyer (application filed June 16, 1902).

As I have stated, it was confidently anticipated that this new machine, which I shall for convenience refer to as the "model E" machine, could be run at much higher speed than the 1899 welt and turn sewing machine. This expectation, however, was not realized, and it was found that the machine could not be run under commer-

cial conditions at a speed above 375 stitches per minute, which was the normal commercial speed of the welt and turn sewing machine of 1899.

Furthermore, the expectations as to the value of the organizations which enabled the model E machine to operate upon shoes provided with lighter insoles were not realized as expected, because although the machine was capable of effecting that economy, reinforced insoles about this time were used largely in increasing numbers, so that the advantages of this model E machine in that connection were practically nullified by this great increase in the use of reinforced insoles, and the consequent disappearance of the field in which these advantages of the model E machine would have been realized.

Accordingly, the model E machine never superseded the welt and turn machine of 1899; a large number of the model E machines were put out, and it continued to be put out together with the old machine, that is, the 1899 machine, up to the time when the new welt and turn sewing machine, known as model G, was produced and put out for commercial use in 1908.

As I have stated, the expectations of the officials and experts of the United Company, as to the higher speed at which model E machine might be operated, were disappointed, although substantial progress was made in the model E machine toward the development of organizations which by themselves were capable of operation at much higher speed than the corresponding organizations of the 1899 machines.

In view of the failure to produce a high-speed machine in the model E machine, the officials of the United Company, as early as 1904, started several inventors on experimental work with the primary object of producing a high-speed welt and turn sewing machine on entirely different lines from those on which the welt and turn machine of 1899 was constructed. This experimental work was carried on steadily, several machines were constructed, one after another, were successively tried out and in turn abandoned. Finally, in 1906, two of the inventors who were engaged in this experimental work had produced machines which were so promis-

ing that they were both given extended experimental trials in shoe factories, under commercial conditions.

Finally, the two machines were tried out in the same shoe factory, side by side, and were run for a number of months on regular work in that factory. During this period they were under constant observation by experts of the United Company, with a view to determining which of the machines should be adopted for commercial use. Finally, the machine which was eventually developed into commercial form and known as model G machine was commercially adopted, having incorporated in it some of the valuable features of the other experimental machine.

#### SHOE MACHINE — MODEL G : GOODYEAR WELT AND TURN.

This machine was put into commercial use in October, 1908, and was known officially as "Shoe Machine, Goodyear Welt and Turn, Model G".

The machine was run regularly in the manufacture of shoes at a speed of 500 stitches per minute, as compared with the speed of 375 stitches per minute of the old welt and turn machine, that is, the machine of 1899. This speed of 375 for the machine of 1899 was the highest speed at which it was practicable to run that machine regularly under commercial conditions. Above that speed the machine occasionally missed a stitch, and, furthermore, it was so organized that a speed in excess of 375 would cause excessive wear of the machine and it would not stand up under constant use at a higher speed.

In the production of a high-speed welt and turn sewing machine, the inventors of the United Shoe Machinery Company encountered many serious problems. One of these problems had to do with a mechanism for putting the proper tension on the thread. It developed in the experimental work that when such a machine was run at a low speed the tension mechanism must offer a greater resistance than when the machine is run at a high speed. This was due to the inertia of the tension mechanism, which caused it to offer a greater resistance to the quicker pull on the thread which was exerted when the machine was run at a high speed. If the mech-

anism was so adjusted that it offered the same resistance as for low speed, the quicker pull on the thread at high speed would frequently break the thread. This problem was serious because it is frequently necessary in the operation of the welt and turn machine to run the machine more slowly on certain parts of the work, as in going around a narrow toe. This problem was overcome by incorporating in this new model G machine the tension mechanism which automatically offered a greater resistance to the pull of the thread at the slower speed, and a less resistance to the pull of the thread at higher speeds.

This mechanism is described in broad terms in patent No. 1,030,-816, June 25, 1912, Holmes. Claim 1 of this patent is as follows:—

"In a sewing machine the combination with means offering and yielding resistance against which the stitch is set, of mechanism for varying such resistance when the speed of operation is varied, during the continued operation of the machine in sewing a seam."

The commercial construction of this mechanism was substantially as shown in the drawings of patent No. 1,030,743, June 25, 1912, Meyer, except that the mechanism was arranged at the back of the machine instead of at the front of the machine as shown in the drawings of this Meyer patent. Most of the claims of this patent No. 1,030,743, which was granted on an application filed September 1, 1909, set forth the mechanism to which I am referring.

A typical claim of the claims of this patent which are directed to this mechanism is the first, which is as follows:—

"1. A sewing machine, having, in combination, stitch forming devices, and means responsive to variations in the speed of the machine operating during the continued operation of the machine in sewing a seam to vary the tension on the thread when the speed of the machine varies."

Combined with this mechanism for automatically varying the resistance of the tension mechanism according to the speed of the machine, was a mechanism for varying the amount of this resistance at the different points in the cycle of the machine's operations in accordance with the requirements of the stitch-forming mechanism at successive stages in the cycle of the machine's operation.

Patent No. 1,030,743, June 25, 1912, which, as I have explained, disclosed substantially the automatic tension mechanism, also shows the double tension mechanism to which I am now referring, substantially as that mechanism was embodied in the commercial machine. And this mechanism is set forth in several claims in that patent. This mechanism is also set forth in broader terms in the claims of patent No. 1,028,474, June 4, 1912, Mayo (application filed November 22, 1909). A typical claim of this patent is No. 13:

"13. A chain stitch sewing machine, having, in combination, stitch forming devices including a take-up acting while the needle is in the work, a tension device, means for actuating said devices to exert a relatively light tension on the thread during the loop-drawing stroke of the needle, and a relatively heavy tension on the thread during the stitch-setting stroke of the take-up, means for simultaneously adjusting the amount of both tensions and means for adjusting the amount of one tension independently of the other."

This mechanism was also set forth in even broader terms in the claims of patent No. 1,017,440, February 13, 1912, Meyer (application filed November 4, 1904).

The fourth claim of this patent was as follows:—

"4. A chain stitch, shoe sewing machine, having, in combination, a needle, a looper, a stitch-setting take-up, a tension device operating to exert a uniform and relatively light tension upon the thread during the retracting stroke of the needle, and an increased tension during the setting of the stitch, and means for adjusting the tension device to vary the amount of increase in the tension without affecting the uniform and relatively light tension exerted thereby on the thread during the retracting stroke of the needle, substantially as described."

Another problem which had to be solved in the development of a high-speed welt and turn sewing machine was the production of such an organization, including the looper and means for actuating it, that in the operation of the machine at high speed the looper would never fail to supply the needle with thread. In the 1899 machine, as I have already explained, the looper would occasionally fail to supply thread to the needle when the machine was run at a speed in excess of 375 stitches per minute. The organization

of the model G machine has never failed to supply thread at any speed at which the machine has been run, and, as I have explained, the regular commercial speed of that machine is 500 stitches per minute. No patents have as yet been granted showing this organization of the model G machine.

Another defect of the old welt and turn machine, that is, the 1899 machine, was that the needle guide which must be so operated that it shall be down close to the stock while the needle is penetrating the stock, to afford proper support for the needle, would fail to operate properly at higher speeds. This was due to the fact that the 1899 machine was so organized that the needle guide was moved downwardly into its needle-supporting position by a spring, and if a lump of wax got on the needle, as would frequently happen, it would prevent the needle guide moving down into its proper needle-supporting position. Of course, if it were otherwise possible to run the 1899 machine at a higher speed than 375, the difficulty to which I have referred would increase out of all proportion to the speed of the machine, since the defects of this spring actuation of the needle guide would manifest themselves much more frequently at a higher speed.

The improvement on this mechanism in the model G machine, which, while an important improvement for such a machine whatever its speed, was of marked value in the high-speed machine, is not disclosed in any patent which has as yet been granted.

Another improvement in this model G machine to which I will direct attention is the organization permitting a yielding of the needle during the feeding of the stock. This improvement manifests its utility chiefly when the stock is being fed around sharply curved lines, as around the toe. The commercial form of this mechanism is not disclosed in any patent which has, as yet, been granted, but the mechanism is set forth in broad terms in the claims of —

Patent No. 935,726, October 5, 1909, Alley, and  
No. 1,030,867, July 2, 1912, Briggs (application filed January 20, 1903).

This new machine of 1908, to which I have referred as the model

G machine, embodied many other improvements in addition to those to which I have specifically referred, many of which improvements are not yet disclosed in any granted patents.

The patents which do set forth mechanisms embodied in this machine are the following: —

- No. 634,850, October 10, 1899, Fowler and Warren.
- No. 666,823, January 29, 1901, Selby.
- No. 835,513, November 13, 1906, Fuller.
- No. 935,726, October 5, 1909, Alley.
- No. 1,003,175, September 12, 1911, Eppler.
- No. 1,005,181, October 10, 1911, Eppler.
- No. 1,015,304, January 23, 1912, Eppler.
- No. 1,015,772, January 30, 1912, Ashworth.
- No. 1,017,059, February 13, 1912, McPherson and Orr.
- No. 1,017,440, February 13, 1912, Meyer.
- No. 1,023,071, April 9, 1912, Eppler.
- No. 1,028,474, June 4, 1912, Mayo.
- No. 1,030,742, June 25, 1912, Meyer.
- No. 1,030,743, June 25, 1912, Meyer.
- No. 1,030,816, June 25, 1912, Holmes.
- No. 1,030,867, July 2, 1912, Briggs.

As to the advantages of the model G welt and turn machine over the welt and turn machine of 1899, it was run, as I have already explained, at a speed of 500, as compared with a maximum speed under commercial conditions of 375 for the 1899 machine. This increased speed, together with features of the organization of the model G machine which made its operation more convenient for the workman, gave the model G machine a capacity of a little over eight per cent more than the capacity of the 1899 machine. This model G machine was very favorably received by shoe manufacturers and over 1400 of these machines were put into shoe factories. The United Company was always behind in its orders. For example, for eight consecutive months, beginning December 1, 1910, the company was at all times more than 200 machines behind in filling its orders for the model G machines.

**SHOE MACHINE — MODEL K: GOODYEAR WELT AND TURN.**

This model G machine, or, to quote its official title, "Shoe Machine, Goodyear Welt and Turn, Model G", is not the present standard commercial machine of the United Shoe Machinery Company, for it was superseded in June, 1911, by still another improved machine, known officially as "Shoe Machine, Goodyear Welt and Turn, Model K". I shall, for convenience, refer to this machine as model K.

This new model K machine is substantially the same as the model G machine, with the incorporation in the organization of that machine of the valuable improvements which were acquired by the United Shoe Machinery Company from Thomas G. Plant in September, 1910.

In explanation of one of the most important of the improvements, in the use of the welt and turn sewing machine of 1899 and also in the use of the model G machine in 1908, it was necessary for the operator at the beginning of the sewing operation to hold with his finger the end of the welting. As the operator always took good care to keep his finger out of the way of the needle and awl, a substantial piece of the welting was always wasted in the operation of the 1899 and model G machines owing to this requirement in the operation of those machines.

When the operator had finished the welt sewing operation on each machine, he had to hold the shoe away from the machine and cut off the welting on the shoe from the supply of welting in the machine by means of a hand knife.

Thomas G. Plant was the first in the history of shoe machinery to provide a welt and turn sewing machine adapted for commercial use in the manufacture of shoes with an organization which held the end of the welting close to the point at which the stitch was to be formed and which at the completion of the welt sewing operation severed the welt close to the point where the last stitch had been formed.

Organized with this mechanism in the welt and turn sewing machine as constructed by Plant was the mechanism which automati-

cally prevented the operator from pulling too much of the welting away from the machine. As I have stated, in the operation of the 1899 and model G machines the operator had to pull a considerable length of welting from the machine in order to get the shoe into position where he could conveniently sever from the main supply of welting that portion of welting which had been secured to the shoe. The welt holding and cutting organization which Plant used in his machines did not, of course, require that this excess of welting should be pulled away from the machine, but his organization of welt-measuring mechanism effectively prevented the operator from pulling away too much welting through carelessness or for other reasons. An advantage of such mechanism in any machine is that after the operator has pulled out an excess length of welting he must, before he begins the sewing operation on the next shoe, pull the welting back into the machine, so that too much will not be presented and wasted at the beginning of the next stitch. The danger is that he is likely not to pull it back far enough into the machine, so that even more will be wasted than he needs, in order to hold the welting with his finger in the manner which I have described.

The advantages of the mechanism of the Plant machine, including these improvements, are very important in the saving of manual operations and in effecting a substantial saving in welting.

Immediately after the acquisition of the patents of Thomas G. Plant by the United Shoe Machinery Company in 1910 some four or five inventors were put to work by the United Company to adapt the Plant improvements for the model G welt and turn sewing machine, which was at that time the standard commercial machine of the United Company. In the reorganization of these mechanisms, which was necessary to adapt them for the model G machine, the United Company inventors made important improvements upon them so that as finally incorporated in the model G machine which, embodying these improvements, and others to which I shall refer, became known as model K machine, improvements were made which represent almost as important advances in the industry as did the Plant improvements. In operating the Plant welt holder

and cutter it was necessary for the operator to step up on a treadle at the time when he desired to sever the welt. In the model K machine it is only necessary for the operator to move the shoe slightly to the left, from the stitch-forming position into the path of the welt holding and cutting mechanism, and that mechanism is automatically and instantly moved forward into operative position by mechanism actuated by the slight pull on the welt which is effected in the movement of the shoe into welt-cutting position. In this quick forward movement of the welt holder and cutter it grips the welt and severs it close to the end of the line of stitches. The welt holder remains in this forward position, holding the end of the welt for the next shoe. In the operation of sewing the welt upon the next shoe, the end of the welt is held by the welt holder in this position close to the point where the first stitch is to be made. The holder remains in this forward position until the completion of the first stitch, when it is automatically retracted into a position where it is entirely out of the way of the shoe during the various positions in which the operator has to hold the shoe during the stitching operation.

I produce two shoes which illustrate the advantages of these improvements. One of these shows a shoe which had its welt attached on the old welt and turn machine, that is, the machine of 1899. It will be observed that on one side of the shoe, the side where the sewing operation began, there is a considerable length of welting which is wasted, and which extends beyond the line of stitching and must later be cut off and thrown away. This was the piece of welting which was held by the finger of the operator at the beginning of the machine's operation.

[*Shoe having welt attached by welt and turn machine of 1899 is marked "Defendants' Exhibit 106".*] [

*Answer to Int. 11 continued:*]

The other shoe which I produce had its welt attached on the present standard commercial machine of the United Company, the model K machine. It will be observed that the piece of welting on each side which extends beyond the line of stitching is short and of substantially the same length on each side. The amount of

welting saved on this shoe may be observed by comparing it with the long piece at the end of the welting, beyond the line of stitching, on one side of the other shoe which I produced. That saving is approximately one inch on each shoe.

[*Shoe having welt attached on defendants' present commercial welt and turn machine, model K, is marked "Defendants' Exhibit 107".*]

[*Answer to Int. 11 continued:*]

The construction of these welt-holding, welt-cutting and welt-measuring improvements in the model K machine is not shown in any patents as yet granted, but these constructions are set forth in broad terms in patents —

No. 700,279, May 20, 1902, Winkley.

No. 877,858, January 28, 1908, Plant.

No. 877,859, January 28, 1908, Plant.

And an experimental stage in the development of the welt-measuring improvements is shown in patent No. 1,071,050, August 25, 1913, Holmes.

The typical claims of the Winkley patent No. 700,279, May 20, 1902, are the following: —

"1. A welt sewing machine, having, in combination, stitch forming mechanism, a welt guide, and a welt holder constructed and arranged to hold the end of the welt in contact with the upper, substantially as described."

"6. A welt sewing machine, having, in combination, stitch forming mechanism including a needle, a welt guide on one side of the needle, and a welt holder on the opposite side of the needle, substantially as described."

Claim 2 of Plant patent No. 877,858, January 28, 1908, is as follows: —

"2. In a boot and shoe sewing machine, the combination with stitch forming devices and means for guiding a boot or shoe in proper relation thereto for the stitching operations, of a welt guide, and welt severing and holding means whereby the welt may be severed and the welt strip held for the next stitching operation."

Claims No. 1 and 11 of Plant patent No. 877,859 are as follows: —

"1. In a welt attaching machine, a welt measuring device comprising stopping means for limiting the withdrawal of the welt upon withdrawal of the work from the machine."

"11. A sewing machine comprising stitch forming mechanism, welt severing means at one side thereof, and welt measuring means at the opposite side thereof, and means to operate the same."

Claim 15 of Holmes patent No. 1,071,050 is as follows:—

"A sewing machine having in combination a welt guide, a welt controlling device, movable with a welt as it is drawn forward, and means for connecting the device with the welt in bringing the machine into position for the removal of the shoe substantially as described."

By way of introduction to my discussion of the next important improvement which was set forth in the patents acquired from Plant, I will explain that in the operation of the model G welt and turn machine, as well as in the operation of the welt and turn machine of February, 1899, when the operation of the machine had been completed, and the machine had come to rest, the needle held in its hook the last loop formed, and before the shoe could be freed from the machine it was necessary for the operator to turn the machine back, advancing the needle so as to cast off this last loop from the hook of the needle. The operator had then to serve the thread with a hand knife.

Furthermore, neither of these machines, that is, the machine of 1899 and the model G machine, was provided with mechanism for stopping the machine.

It was accordingly necessary for the operator, as he approached the end of the stitching operation, to place his hand upon the belt pulley at the left of the machine, slow up the machine, stop it with his hand and then turn the machine back so as to bring the needle forward into position to cast off the loop.

In the welt-sewing machine as constructed by Plant there was incorporated for the first time mechanism for automatically stopping and reversing a welt-sewing machine and by the reversing movement casting off the last loop held by the needle.

This improvement is set forth in broad terms in patent—

No. 1,018,130, Plant, of February 20, 1912.

A typical claim of this patent is the first, as follows:—

"1. A chain stitch inseam shoe sewing machine, having, in combination, stitch forming devices including a curved hooked needle

and a looper and means, acting automatically upon stopping the machine, to free the last needle loop from the stitch forming devices and bring the needle to rest out of engagement with the work."

The mechanism which Plant used in his welt and turn machine for automatically stopping the machine and turning it back to free the last loop from the needle, was a very unsatisfactory mechanical organization, as it did not always act reliably and was subject to frequent breakage. The inventors who, as I have stated, were set to work to improve this Plant mechanism devised for the model K machine a radically different mechanism for stopping and turning back the machine to release the shoe from the machine by casting off the last loop from the needle. These improvements made by the United Shoe Machinery Company inventors are not yet shown in any granted patents.

Mr. WEBSTER. I would like to interpose an objection, before we start. Counsel for petitioner objects to statements by the witness heretofore made or that may be made hereafter with reference to what others said, thought or believed, as being mere hearsay. Counsel for petitioner also objects to the introduction of any evidence relating to mechanisms not shown and described in patents and referred to in claims of patents issued prior to the filing of the petition in this cause, both said objections being based on the ground that the same is immaterial, inadmissible and not competent in any respect.

Counsel for petitioner moves to strike out all such objectionable testimony heretofore introduced and gives notice that at the proper time hereafter a formal motion to strike out will, as he is at present advised, be made so as to formally bring the matter to the attention of the court.

[*Answer to Int. 11 continued:*]

Another important improvement set forth in patents acquired by the United Shoe Machinery Company from Plant was an improved welt-guide mechanism. In the 1899 machine the welt-guide moved from its rearward position which it took at each operation of the machine, to permit the feed of the welt directly into welt-presenting position.

It was not practicable in that organization to move the welt-guide closely into contact with the shoe because when the materials increased in thickness the welt-guide would press the shoe away from the path of the needle, so that the stitch would not be properly formed. The result was that it was the practice in the use of the old machine to adjust the welt-guide mechanism so that the welt-guide did not advance quite to the shoe. Consequently the welt-guide did not afford to the operator any substantial support against the backward movement of the needle at that time in frictional engagement with the stock and tending to pull the stock back with it, nor did the welt-guide assist the operator in resisting the thrust of the awl.

The Plant welt-guide mechanism is shown and set forth in the claims of reissued patent No. 13,374, reissued February 27, 1912, Plant (original patent No. 947,401, January 25, 1910).

In the mechanism set forth in this patent the welt-guide in its forward movement after the feed of the stock, at each operation of the machine, was first moved yieldingly into position to present the welt properly for the stitch-forming operation. Then, after the needle had entered the welt, the welt-guide was moved further forward, still yieldingly to press together the layers of material, and finally on completion of the forward movement of the needle the welt-guide was locked in its most advanced position, thus holding the layers of stock firmly pressed together and affording the needed assistance to the operator in resisting the frictional pull on the materials during the backward stroke of the needle and the following stroke of the awl in the same direction.

A typical claim of reissued patent No. 13,374 is 48:—

"48. A sewing machine containing stitch forming mechanism including a needle, and feed mechanism, combined with a back gauge having movement toward and from the work, and means for moving the back gauge forward into substantial contact with the work in advance of the needle to approximately position the work and completing its forward movement after the needle has penetrated the work."

The "back gauge" of this claim is the part that I have above designated as the "welt-guide". The welt-guide performs a double

function of presenting the welt in position for attachment to the shoe and serving as a back gauge in the manner which I have described.

All of the improvements in welt and turn sewing machines which were set forth in patents acquired by the United Company from Plant were, as I have indicated in discussing some of them, substantially improved by inventors of the United Company before they were introduced into the organization of the model G machine, the machine of 1908, to produce the present commercial machine, the model K machine. These improvements by the United Company inventors are for the most part not yet shown in granted patents.

I should further explain that, while these Plant improvements were very valuable, as I have endeavored to explain, the Plant welt and turn sewing machine to which they were applied was a machine constructed substantially on the lines of the United Company's 1899 machine and was, in fact, not so satisfactory a machine as was the United Company's 1899 machine.

The utility of these Plant improvements manifested itself to a much greater degree when the improvements were incorporated in a high-speed machine and the value of the improvements increased out of proportion to the increase in the speed of the machine on which they were used. It was not, therefore, until these improvements were incorporated in the high-speed model G machine of the United Company that the advantages and utility of the improvements were fully realized.

The patents which have so far been granted on improvements embodied in the model K machine, including those embodied in the model G machine, except some of the improvements which were in the model G machine which were superseded by the improved mechanisms of the model K machine, are as follows: —

- No. 666,823, January 29, 1901, Selby.
- No. 700,279, May 20, 1902, Winkley.
- No. 710,612, October 7, 1902, Richardson.
- No. 835,513, November 13, 1906, Fuller.
- No. 877,858, January 28, 1908, Plant.

- No. 877,859, January 28, 1908, Plant.  
No. 935,726, October 5, 1909, Alley.  
Reissued No. 13,374, February 27, 1912, Plant (original patent dated January 25, 1910).  
No. 958,296, May 17, 1910, Plant.  
No. 1,003,175, September 12, 1911, Eppler.  
No. 1,015,304, January 23, 1912, Eppler (application filed February 26, 1906).  
No. 1,015,772, January 30, 1912, Ashworth (application filed November 22, 1909).  
No. 1,017,059, February 13, 1912, McPherson and Orr (application filed August 15, 1910).  
No. 1,017,440, February 13, 1912, Meyer (application filed November 4, 1904).  
No. 1,018,130, February 20, 1912, Plant (application filed June 6, 1911).  
No. 1,023,071, April 9, 1912, Eppler (application filed November 22, 1909).  
No. 1,028,474, June 4, 1912, Mayo (application filed November 22, 1909).  
No. 1,030,742, June 25, 1912, Meyer (renewed application filed December 9, 1904).  
No. 1,030,816, June 25, 1912, Holmes (application filed May 22, 1909).  
No. 1,030,867, July 2, 1912, Briggs (application filed January 20, 1903).  
No. 1,048,511, December 31, 1912, Eaton (application filed December 5, 1907).  
No. 1,071,050, August 26, 1913, Holmes (application filed August 30, 1909).  
No. 1,071,435, August 26, 1913, King (application filed March 7, 1912).  
The commercial advantages of the model K machine over the welt and turn machine of 1899 and over the model G machine of 1908 were striking. The model K machine was regularly run in shoe factories at the same speed as the model G machine; that is,

500 stitches per minute as compared with the speed of 375 stitches per minute of the 1899 machine; but the model K machine had a capacity of about six per cent over that of the model G machine and about fifteen per cent over that of the 1899 machine. This increase in capacity over both the 1899 machine and the immediate predecessor of the model K machine was due to two important advantages secured by the organization of model K machine. First, the improvements to which I have briefly referred saved a great deal of the time of the operator; and, second, those improvements facilitated the work of the operator in running the machine.

The result was that the time when the 1899 machine or the model G machine was idle was greatly reduced by the improvements of the model K machine, the present commercial machine, so that the machine was operating more of the time, and accordingly had increased the capacity. Of course, the increased speed which the model K machine had, like the model G machine, contributed substantially to the capacity of the model K machine as compared with the 1899 machine.

A further distinct improvement in the industry affected by the improvements incorporated in the model K machine was the substantial saving afforded to the manufacturer in the cost of his weltting.

I have already explained how about an inch of weltting is saved upon each shoe. This saving amounts to at least a quarter of a cent per pair of shoes, and is greater on men's shoes. This saving amounts in the aggregate to many thousands of dollars in a shoe factory of medium size.

All of these advantages resulted in a very favorable reception by shoe manufacturers of the model K machine immediately after it was offered to them. The first machine, as I have stated, was put out in June, 1911, but the company was not able to build them and put them out in substantial numbers before November, 1911. In the period between November 1, 1911, and September 1, 1913, 912 of these model K welt and turn machines were put into shoe factories. The company has always been behind in its orders for these machines. For example, on March 1, 1913, at the end of

the last fiscal year, the company was 197 machines behind in filling its orders.

*Int.* 12. If you have not already answered this question, I would like to have you answer it now: To what extent have these two types of machines, namely, models G and K, been put into use by the United Company?

*Ans.* Over 1400 of the model G machines were put into shoe factories, and, as I have just stated, up to September 1, 1913, 912 of the model K machines have been put into shoe factories.

*Int.* 13. Will you state the number of machines of models K and G type, also the old type, leased by the United Company during the last fiscal year?

*Ans.* During the last fiscal year of the company, ending March 1, 1913, six of the old machines, that is, the machine of 1899, were shipped; fifty-four of the model G machines, and 497 of the model K machines.

*Int.* 14. Reference was made by Mr. Chapman to Briggs' patent 461,793, dated October 20, 1891. State, if you know, what change was required in the organization of a welt-sewing machine to enable it to perform the Briggs method.

[*By Mr. Webster. Objected to as immaterial.*]

*Ans.* To adapt a welt and turn sewing machine to the practice of the method set forth in the claim of the Briggs patent No. 461,793, October 20, 1891, no change was necessary in the organization of such a machine. It was only necessary to provide the machine with a take-up and a thread finger, and both take-up and thread finger were old before the date of the Briggs invention in lock-stitch sewing machines. They are both disclosed in patent No. 253,156, January 31, 1882, Campbell. The welt and turn sewing machine of the Goodyear Shoe Machinery Company, that is, the standard commercial machine of the United Company in 1899, was held to infringe this Campbell patent No. 253,156. The decision of the court is reported in 47 Fed. Rep. page 118.

*Int.* 15. Did the United Company machine that you have just spoken of in your last answer practice the Briggs method?

*Ans.* Yes, sir.

*Int.* 16. Mr. Chapman has referred to patent to Stickel No. 296,084, dated April 1, 1884, disclosing a method of forming a chainstitch as anticipatiag the single claim of Briggs patent 461,-793, of October 20, 1891. What have you to say as to the correctness of Mr. Chapman's conclusion in this matter? Please note that this question is asked *de bene esse*, we having objected to the question put to Mr. Chapman and answered by him on the same subject.

*Ans.* I am of the opinion that Mr. Chapman was absolutely incorrect in his conclusions that the method set forth in the claim of Briggs patent No. 461,793, October 20, 1891, was disclosed in patent No. 296,084, April 1, 1884, Stickel. In my opinion, there is absolutely no suggestion in the Stickel patent of the method set forth in the single claim of the Briggs patent. The most important, and, in my opinion, a conclusive reason why the Stickel patent does not disclose the Briggs method is that it fails to suggest even an essential step in the Briggs method as defined in the claim of the Briggs patent; that is:—

"Passing the second loop made from the supply thread through the second hole in the materials and through the drawn down loop," . . .

This step of the Briggs method is well illustrated in Figs. 5 and 6 of the drawings of the Briggs patent. The Stickel patent fails absolutely to disclose this essential step of the Briggs method because, as stated in line 15 of page 2 of the Stickel specification: "the thread is kept taut" . . .

and in lines 20 to 26, page 2, of the Stickel specification:—

"the tension on the previous stitch will be constantly kept taut (see Fig. 6) until the needle, with loop-holder and finger, has been drawn backward far enough so as to cause the loop of thread to slip off from the finger and to be drawn through the hole, as seen in Fig. 7."

As I understand these statements in that Stickel specification, the free end of the thread represented at G is kept under constant tension from the position of the tools represented in Fig. 5 through the position shown in Fig. 6 to the position illustrated in Fig. 7.

This being the case, it is obvious that at the moment the short loop shown in Fig. 6 is released from the spring finger, the thread in the loop will immediately be taken up by the tension. So that in passing through the stock from the position shown in Fig. 6 to the position shown in Fig. 7 the needle must form its own loop just as a needle in all chainstitch sewing machines in use at the time of the application for the Stickel patent had to form its own loop. It seems obvious, therefore, that there is no suggestion in this Stickel patent of the essential step of the method defined in the claim of the Briggs patent to which I have referred; that is:—“passing the second loop made from the supply thread through the second hole in the materials and through the drawn down loop,” . . .

I call attention further to the fact that in the use of the Stickel tool there must necessarily be a very objectionable rendering of the thread, or see-sawing action of the thread through the hook of the needle which it was an object of the Briggs method to overcome. First, there must be a rendering of the thread through the hook of the needle in the change from the relative positions of the needle, hook and thread shown in Fig. 5 to the relative positions shown in Fig. 6. That there must be this rendering is clear from the statement in lines 17 to 20 on page 2 of the Stickel specification as follows:—

“Then the tool is drawn back, the tension of the loop thereby increasing and swinging the movable finger inward toward the hook.”

This rendering of the thread through the hook of the needle is, of course, in the direction of the tension. Again, there must be a rendering of the thread through the hook of the needle in the opposite direction, in the progress of the needle from the position shown in Fig. 6 to that shown in Fig. 7. As I have explained, the instant that the thread is released by the spring finger, which release immediately follows the position of the part shown in Fig. 6, the thread which is in the small loop shown in Fig. 6 is immediately taken up by the tension. Accordingly what loop there was is now gone and the needle must form its own loop in passing through the materials and in moving to the position shown in Fig. 7. Furthermore, it

must be clear that even if I am incorrect in my view that according to the method of the Stickel specification the small loop shown in Fig. 6 is taken up by the tension immediately upon its release by the spring finger, it cannot be denied that the loop shown in Fig. 6 is less than half the size of the loop shown in Fig. 7, and it is certainly obvious that the loop shown in Fig. 7 cannot be produced without substantial rendering of the thread through the hook of the needle.

Another reason, which to my mind is alone conclusive, of the failure of the Stickel patent to disclose the method of the Briggs patent is that there is no suggestion in the Stickel patent of any effect whatever being produced upon the preceding stitch. The object of the method defined in the claim of the Briggs patent is to set the preceding stitch, not the stitch which is being formed. This is clear from the statement on page 2 of the specifications of the Briggs patent, in lines 93 to 99, as follows:—

"If now the supply thread *t* be pulled taut in the direction of the arrow, as shown in Fig. 7, the loop *h'* will be drawn tight about the instrument and laid against the surface of the material *b* preparatory to forming the third stitch, and at the same time the first stitch will be set."

Again, quoting from lines 66 to 70 on page 2 of the Briggs specification:—

"The supply thread *t* is represented as pulled taut in the direction of the arrow, the second loop *h'* as tightened around the instrument and laid against the material *b* and the first stitch *b* as set."

The change effected by the movement of the Stickel tool from the position represented in Fig. 4 to that represented in Fig. 5 is simply a tightening of the loop around the needle. There is no suggestion anywhere in the Stickel specification that any effect whatever is produced upon the preceding stitch by the transition from the position of the tool shown in Fig. 4 to that shown in Fig. 5, nor indeed is there anywhere on the Stickel specification a suggestion that Stickel sets the preceding stitch or any stitch in any way whatsoever.

The expression "previous stitch" in line 70 on page 1 of the

Stickel specification, and line 16 of page 2 of the Stickel specification, obviously, in view of the context, must mean the stitch being formed at the time, which comprises the loop then around the shank of the needle.

As I have stated, there is nothing in the Stickel specification to suggest that he intended or contemplated setting the stitch in any manner whatsoever, and much less is there any suggestion that he contemplated setting the stitch in any other manner than that which was the only way known at the time of the application for his patent; that is, by the needle, and by the needle alone, with the attendant rendering of the thread through the hook of the needle, which it was an object of the Briggs method to obviate.

Mr. Chapman attempted to support a hypothetical method of operation which he set up for the Stickel method by appealing to the knowledge of the "man skilled in the art". The conclusive answer to Mr. Chapman's statement in this connection is that at the date of the application for the Stickel patent, December 15, 1883, the Briggs method, as defined in the claim of the Briggs patent, had not been invented. The only way to set a stitch in a chain-stitch sewing machine which at that date was known to the man skilled in the art was the setting of the stitch by means of the needle, as it was done universally by all chain-stitch sewing machines at that time.

I should like to add that I never heard of the Stickel patent until it was mentioned by Mr. Chapman in his testimony, and it has never in any way been mentioned in connection with any litigation involving the Briggs patent No. 461,793.

Mr. CHOATE. This question is also asked *de bene esse* on the same ground that we objected to the subject-matter of it in Mr. Chapman's examination:

*Int. 17.* Mr. Chapman has asserted the identity of the subject-matter of claims 4 and 5 of British patent 13,366 of 1888 to French and Meyer with the Briggs method as defined in the single claim of the Briggs patent. State briefly what is your view of the accuracy of Mr. Chapman's conclusion.

*Ans.* I am forced to the conclusion that in taking this position

Mr. Chapman has failed to understand the Briggs method as set forth in the claim of Briggs patent 461,793. That method is a method of forming chain stitches. The method defined in claims 4 and 5 of British patent No. 13,366 in 1888 is a particular method to be practiced in the manufacture of boots and shoes, and includes only the single step of the method defined in the claim of the Briggs patent. A machine could be built and used which would infringe the claim of the Briggs patent without infringing the claims 4 and 5 of the British patent No. 13,366 of 1888; while, on the other hand, a machine could be built and used which would infringe the method defined in claims 4 and 5 of the British patent, but would not infringe the claims of the Briggs patent. For example, if the Eppler welter were provided with a thread finger and take-up, properly timed, the machine would infringe the claim of the Briggs patent, but would not infringe the two claims of the French and Meyer British patent. While, on the other hand, a weltting machine which laid the chain on the welt and which was provided with a take-up but not with a thread finger would infringe claims 4 and 5 of the British patent, but would not infringe the single claim of the Briggs patent.

More than this, the single claim of the Briggs patent includes as an important and essential step in its method a step which is not set forth in claims 4 and 5 of the British patent, and the claims in the Briggs patent would have been patentable if a machine practicing the methods defined in claims 4 and 5 of the British patent had been a part of the prior art at the time the Briggs invention was made.

Mr. WEBSTER. All that portion of the answer relating to what was or was not patentable, with all that portion referring to what was or was not an infringement or what might or would be an infringement, is objected to as inadmissible, incompetent and an attempt on the part of the witness to pass on questions of law.

*Int.* 18. Have you collected under one cover various patents which have been referred to in your testimony?

*Ans.* I have.

*Int.* 19. Will you state what the volume of patents before you comprises?

*Ans.* The collection of patents which I produce comprises copies of all of the patents which I have mentioned in my deposition regarding welt and turn sewing machines.

[One volume of copies of patents introduced in evidence and marked "Defendants' Exhibit 108".]

*Int.* 20. Will you kindly read into the record the number, date and name of the patentee of each of those patents?

*Mr. Webster.* And the title, too; don't you want that?

*Mr. Choate.* I don't care for it. That is to show exactly what is in this exhibit, without having to examine it itself.

*Ans.* No. 34,413, February 18, 1862, Destouy.

Reissue No. 3,635, reissued September 7, 1869, Destouy.

No. 93,731, August 17, 1869, Mills.

No. 170,547, November 30, 1875, Goodyear and Hadley.

No. 190,709, May 15, 1877, Dancel.

No. 253,156, January 31, 1882, Campbell.

No. 366,935, July 19, 1887, Dancel.

No. 412,703, October 8, 1889, French and Meyer.

No. 412,704, October 8, 1889, French and Meyer.

No. 461,793, October 20, 1891, Briggs.

No. 488,505, December 20, 1892, LaChapelle.

No. 495,452, April 11, 1893, Cole.

No. 507,873, October 31, 1893, Arnold.

No. 518,911, April 24, 1894, Briggs.

No. 533,301, January 29, 1895, LaPerriere.

No. 561,386, June 2, 1896, French.

No. 583,522, June 1, 1897, Warren.

No. 634,850, October 10, 1899, Fowler and Warren.

No. 666,823, January 29, 1901, Selby.

No. 679,409, July 30, 1901, Alley.

No. 684,537, October 15, 1901, Briggs.

No. 684,538, October 15, 1901, Briggs.

No. 687,719, December 3, 1901, Briggs.

No. 700,279, May 20, 1902, Winkley.

No. 705,062, July 22, 1902, French and Meyer.

No. 705,063, July 22, 1902, French and Meyer.

- No. 710,612, October 7, 1902, Richardson.  
No. 732,729, July 7, 1903, French and Meyer.  
No. 781,596, January 31, 1905, French and Meyer.  
No. 790,790, May 23, 1905, French and Meyer.  
No. 833,513, November 13, 1906, Fuller.  
No. 877,858, January 28, 1908, Plant.  
No. 877,859, January 28, 1908, Plant.  
No. 935,726, October 5, 1909, Alley.  
Reissue No. 13,374, reissued February 27, 1912, Plant.  
No. 958,298, May 17, 1910, Plant.  
No. 1,003,175, September 12, 1911, Eppler.  
No. 1,005,181, October 10, 1911, Eppler.  
No. 1,015,304, January 23, 1912, Eppler.  
No. 1,015,772, January 30, 1912, Ashworth.  
No. 1,017,059, February 13, 1912, McPherson and Orr.  
No. 1,017,440, February 13, 1912, Meyer.  
No. 1,018,130, February 20, 1912, Plant.  
No. 1,023,071, April 9, 1912, Eppler.  
No. 1,028,474, June 4, 1912, Mayo.  
No. 1,030,742, June 25, 1912, Meyer.  
No. 1,030,743, June 25, 1912, Meyer.  
No. 1,030,804, June 25, 1912, Briggs.  
No. 1,030,816, June 25, 1912, Holmes.  
No. 1,030,867, July 2, 1912, Briggs.  
No. 1,048,511, December 31, 1912, Eaton.  
No. 1,071,050, August 26, 1913, Holmes.  
No. 1,071,435, August 26, 1913, King.

Mr. WEBSTER. The introduction of all patents issued after the date of the filing of the petition is objected to as having no bearing on the question at issue.

#### OUT-SOLE STITCHING MACHINES.

*Int.* 21. What is the function of an out-sole stitcher of the Good-year type in the manufacture of shoes?

*Ans.* An out-sole stitcher is used to sew the out-sole of a welt shoe to the welt, in this manner attaching the out-sole to the shoe.

*Int.* 22. Mr. Chapman has testified that the subject-matter of certain Letters Patent, namely, 473,870, April 26, 1892, French and Meyer, and 474,774, May 10, 1892, French and Meyer, are embodied in the machine illustrated in Complainant's Exhibit 208, which is a photograph of an out-sole lockstitch machine manufactured by the Long Machine Company. How does the machine illustrated in Plaintiff's Exhibit 208 compare with the Goodyear rapid lockstitch out-sole machine put out by the United Company in February, 1899?

#### LOCKSTITCH MACHINE : GOODYEAR OUTSOLE RAPID.

*Ans.* I have not had an opportunity to examine the machine of which Plaintiff's Exhibit 208 is a photograph, but that machine is apparently a copy of the Goodyear out-sole rapid lockstitch machine as put out by the Goodyear Company just prior to February, 1899, and by the United Shoe Machinery Company after that date, except that the machine shown in this photograph is not organized to sew the out-soles of shoes provided with extension edges. I have examined an out-sole stitcher which bore the following name plate : "R. H. Long Machinery Company, So. Framingham, Mass., United States of America, Patent Applied For. Machine No. 870." That machine which I examined had a different base from the base shown in the Exhibit 208, owing, I assume, to the fact that it was a part of a cobbler's outfit, and it had a bobbin winder on the left end of the shelf. Otherwise that machine was a substantial duplicate of the United Company's machine of 1899, with the important exception to which I have previously referred ; that is, it was not organized to sew shoes provided with extension edges.

*Int.* 23. What was the first patent definitely directed to a shoe stitcher of this general character?

*Ans.* The first patent for a machine of this type was No. 127,-423, June 4, 1872, Mills. A typical claim of this patent is the second, as follows:—

"2. In a machine, as aforesaid, for sewing the welts and soles of boots and shoes, the barbed curved needle formed and moving within the small radius described, and operating in combination

with the shuttle, which lays its thread in the channel formed in the sole of the boot or shoe, substantially as set forth, for the purpose specified."

Among the later patents, illustrating drawings and setting forth in their claims machines for sewing out-soles of welt shoes, is patent No. 253,156, January 31, 1882, Campbell. The machine shown in that patent was commercially used for sewing out-soles to welts for many years.

*Int. 24.* Referring to the patents enumerated by Mr. Chapman, describe briefly the several alleged improvements shown and described in those patents which were embodied in the Goodyear machine of 1899 and in the Long machine illustrated in said Exhibit 208.

*Ans.* Referring, first, to patent No. 473,870, April 26, 1892, which was the first patent to which Mr. Chapman referred as describing in its claims mechanism embodied in the machine shown in Plaintiff's Exhibit 208, claims 1, 3, 5 and 6 of that patent describe the mechanisms connecting the pull-off and presser foot. Claims 4, 10 and 11 describe the mechanism for positively operating the thread lifter. Claim 7 is directed to mechanism for actuating the looper, and claims 8 and 9 of the mechanism employed in that machine for adjusting the thread clamp. The mechanism set forth in all of the eleven claims of this patent No. 473,870 was embodied in the out-sole rapid lockstitch machine as it was put out by the Goodyear Shoe Machinery Company just prior to February, 1899.

Patent No. 474,774, May 10, 1892, French and Meyer, the subject-matter of which Mr. Chapman also found to be embodied in the machine of Plaintiff's Exhibit 208, describes in its three claims the presser-foot lifting mechanism used in the Goodyear out-sole rapid lockstitch machine in 1899.

Patent No. 424,966, April 8, 1890, French and Meyer, was also discussed by Mr. Chapman in connection with the machine of Plaintiff's Exhibit No. 208. Assuming that that exhibit is a photograph of a machine substantially like the Long machine No. 870 which I have stated I have examined, I do not agree that the ma-

chine of Exhibit 208 does not include the mechanism defined in the first claim of this patent. If this claim is entitled to any liberality at all in the application of the doctrine of equivalents, it will, in my opinion, set forth mechanism which is incorporated both in the Goodyear out-sole lockstitch machine of 1899 and in the Long stitcher, although, of course, the utility of this mechanism is limited to the oscillating type of shuttle. Both of these machines, however, that is, both the Goodyear machine of 1899 and the Long stitcher, used the oscillating type of shuttle.

[*Adjourned to 10 A. M., Tuesday, October 7, 1913.*]

BOSTON, MASS., October 7, 1913.

Present: ALLEN WEBSTER, Esq., of Counsel for Complainant; BENJAMIN PHILLIPS, Esq., appearing as counsel for Defendant, in the absence of Mr. CHOATE.

*Direct Examination by BENJAMIN PHILLIPS, Esq., of Counsel for Defendant.*

*Int.* 25. Did the Goodyear stitchers put out by the United Company in 1899 involve any features of construction and organization not embodied in the machine illustrated in Complainant's Exhibit 208? If so, state what they were and their importance in the art. If the same were shown and described in Letters Patent of the United States, state the patents.

*Ans.* The Goodyear out-sole stitcher as put out by the Goodyear Company just prior to 1899 and by the United Company immediately after February, 1899, embodied the organization set forth in claims of the following patents:—

No. 563,471, July 7, 1896, French and Meyer.

No. 563,472, July 7, 1896, French and Meyer.

No. 582,510, May 11, 1897, Shriner and Adams.

The mechanism set forth in the claims of the three patents which I have just enumerated was described more broadly in an application for a patent which was then pending and upon which there was subsequently granted patent—

No. 675,783, June 4, 1901, Meloon.

In general terms the mechanism set forth in the claims of these

four patents which I have enumerated consisted in an organization in an out-sole stitching machine which adapted that machine to attach the out-soles of welt shoes, which were provided with extension edges. The term "extension edge" has been used generally to include what is more properly known as a Scotch edge, and what is usually termed a Baltimore edge.

I produce a shoe which is provided with a Scotch edge. In this shoe it will be noted that the edge of the sole around the forepart extends a substantial and uniform distance from the upper.

[*Shoe, extension edge, Scotch, introduced in evidence and marked "Defendants' Exhibit 109".*]

[*Answer to Int. 25 continued:*]

I produce also a shoe provided with a Baltimore edge, and call attention to the fact that in this shoe the edge also projects from the upper around the forepart, but that the extension is not uniform. The projecting edge of the sole increases gradually from the middle of the toe around the outside of the shoe and the width is greatest adjacent to the ball. On the inside of this particular shoe the extension edge on the sole increases gradually in width from the middle of the toe around the inside of the shoe, to a maximum width adjacent to the ball. There is a wide variety in the contours which are imparted to the extension edges of Baltimore edge shoes in their manufacture, according to the style of the shoe or the demand of the customers for whom these shoes are made.

[*Shoe, extension edge, Baltimore, introduced in evidence and marked "Defendants' Exhibit 110".*]

[*Answer to Int. 25 continued:*]

Of these two types of extension edges, that with the Scotch edge — that is, the extension with uniform width all around the forepart — is the older. Prior to 1895 shoes had for many years been made by hand which were provided with Scotch edges. The Baltimore edge was of more recent development, but that had, prior to about 1895, been used in hand-made shoes for several years.

I call attention to the fact that in both of the shoes which I have produced, Defendants' Exhibit 109 and Defendants' Exhibit 110, the edge of the sole is narrower in the shank than in the forepart.

And in the forepart, where substantial utility is secured by the wider edge, the maximum width of that extension in the Baltimore edge shoe is located at the part of the shoe where the advantages of the extension are most needed.

It is common experience that in the wear of a shoe the upper leather stretches. This is due partly to the elastic character of the leather, and partly to the strain upon the leather across the ball of the foot which is caused in walking. This stretching causes the upper to spread across the ball, and after the upper has been so stretched the outline of the stretched upper will be approximately parallel with the edge of the sole in the usual type of Baltimore edge shoe. Accordingly the extension edge affords a proper support for the upper, and for the foot at exactly the point where that additional support is needed; that is, at the ball, where the greatest stretching of the upper takes place. It is across the ball, also, that the wearer of the shoe needs the maximum support for the foot in walking, and the total width of the sole of an extension edge shoe, increased as it is by the extension edge of maximum width in the ball, affords the maximum support for the foot of the wearer across the ball where that maximum support is needed.

Another practical advantage of the Baltimore extension edge sole relates to the usual tendency of the foot to turn over toward the outside of the shoe. This tendency is resisted by the wider edge on the outside of a Baltimore edge shoe. A still further advantage in an extension edge, which projects beyond the upper all around the forepart, is that it protects the upper of the shoe and the foot of the wearer from injury in case of accidental contact with an obstacle in walking. It has been my own experience that many times I have avoided injury to my foot, when I have accidentally kicked against an obstacle in walking, by taking the force of the blow upon the extension edge of my shoe instead of upon the upper.

As I have stated, Scotch edges were made by hand for many years prior to 1895, and Baltimore edge shoes were also made by hand for several years prior to that date, and up to that date there had been provided no machines which were organized to sew the out-soles of shoes provided with extension edges.

Defining somewhat more specifically the extension edge organization of the out-sole rapid stitcher as it was put out in 1899, that organization enabled the machine to attach the out-sole to the welt by a line of stitching which was located around the forepart of the shoe as close as practicable to the edge of the sole, providing for this without interfering with the normal operation of the machine in the shank. It is desirable that the outseam in the shank shall be located as close as possible to the edge of the last. On the other hand, it is important that around the forepart the outseam shall be located as close as is practicable to the edge of the sole. Such location of the outseam around the forepart is important, because it prevents the out-sole and the welt from springing apart, which would not only result in unsightly appearance but would admit moisture between the welt and the out-sole, which would result in the rotting of the thread, and eventually in the breaking of the seam and the tearing away of the sole from the welt.

In 1899 two types of extension edge mechanisms were supplied to users of the Goodyear out-sole stitcher. These were known as types A and B. Type A was described in the claims of patent No. 675,783, June 4, 1901, Meloon, and No. 563,471, July 7, 1896, French and Meyer. Type B was described in the claims of patent No. 675,783, June 4, 1901, Meloon; No. 563,472, July 7, 1896, French and Meyer; and No. 582,510, May 11, 1897, Shriner and Adams.

It will be noted that I have included in the list of patents on both types patent No. 675,783, June 4, 1901, Meloon. This patent sets forth in its first claim an organization of out-sole stitching machine which enables such a machine to attach the soles of extension edges. The first claim of that patent is as follows:—

“1. In a sole sewing machine for uniting the outer sole and welt of a shoe while the shoe is on the last, the combination with the stitch forming mechanism, of means external to the shoe for engaging the outer sole and welt and holding both against the end-wise movement of the needle, and a guide for engaging and externally guiding the shoe, the said guide being movable during the stitching operation for the purpose of varying at the will of the operator the position of the guide with relation to the stitching

mechanism, whereby the line of stitching may be located nearer to or farther from the upper, as set forth."

In 1899 manufacturers were divided in their preference as to the type of extension edge mechanism which was better adapted for their work. In recognition of this preference either type was supplied as ordered by manufacturers. Within a few years after 1899, however, the demand for type B fell off rapidly and type A was generally supplied with the machine. After 1899 the proportion of shoes which were made with extension edges increased rapidly, and by 1908 the demand for an out-sole stitcher organized for extension edge work was so universal that at the beginning of that year the out-sole stitcher as supplied by the United Company was regularly organized for this work.

At the end of the company's fiscal year March 1, 1911, practically all, if not every one, of the out-sole stitchers which were being used for attaching the out-soles of welt shoes were organized to sew extension edge shoes. At that time, as at the present time, and in fact as for some years prior to March 1, 1911, nearly all welt shoes, both men's and women's, which were being manufactured were provided with extension edges, and I am satisfied that no manufacturer in the country was not making the greater part, in fact nearly all, of his shoes with extension edges. Prior to the date which I mentioned, March 1, 1911, an organization for sewing extension edges had been incorporated in the model K out-sole stitcher which, as I shall explain later, was adopted in May, 1910, and superseded the out-sole stitcher of 1899.

Finally, as to the importance and value of an organization in an out-sole stitching machine which will enable it to attach the soles of extension edge shoes, I should state that in my opinion it is quite as important that the machine should be able to handle the shoe properly in such manner as to locate the line of stitching where good shoemaking requires that it should be located, as it is that the machine should properly form the stitch; and I regard the extension edge organization as important and as essential a part of an out-sole stitching machine under modern conditions as are the needle and awl.

Another improvement which was made in the Goodyear out-sole stitcher just prior to 1899 was the embodiment in it of mechanism which would bevel the welt simultaneously with the stitching. This mechanism was constructed as is described in all twelve claims of patent number 704,458, July 8, 1902, Hadaway. This improvement was set forth in more general terms in reissued patent No. 11,578 [original patent No. 549,124, November 5, 1895], and in patent No. 704,457, July 8, 1902, Hadaway.

Claim 7 of reissued patent No. 11,578 is as follows:—

“7. The combination with the stitch forming mechanism of a shoe sewing machine, of mechanism for feeding the work, and welt beveling mechanism arranged to bevel the welt during the sewing operation, substantially as described.”

The advantage of this improvement was that such manufacturers as desired to perform this operation upon their shoes could in the use of an out-sole stitcher provided with this improvement perform the welt beveling and the stitching operation simultaneously, thus obviating the necessity on such work of performing the welt beveling operation subsequently, either by hand or by another machine operation.

*Int.* 26. State whether or not, since 1899, there have been any improvements or modifications introduced in or in connection with the Goodyear stitcher put out by the United Company. If so, what they were; the reason for them, and their importance in the art. If the same were shown and described in any Letters Patent of the United Company, name those patents.

*Ans.* I will first state that in 1910 a radically new out-sole stitching machine was put out by the United Company which was known as model K, and which superseded the out-sole stitching machine of 1899, and that model K was in turn superseded in 1912 by another new model, which was known as model M. Before discussing these machines, however, I will refer to a series of very useful improvements which were made in the out-sole stitcher of 1899 during the years following.

One of the most important of these improvements consisted in the organizing of the 1899 out-sole stitcher to stitch the outsole to

the welt by what is known as a "fudge stitch". The practice of sewing out-soles with a fudge stitch was introduced about 1905. Prior to that date it had been the practice to sew the out-sole by a stitch which was laid upon the upper surface of the welt, and these stitches were afterward "separated" by forming an indentation in the interval between successive stitches. About 1905, however, manufacturers decided that they preferred to finish the upper face of the welt in a different manner. That is, by wheeling this upper face of the welt to form imitation stitch impressions, and then by burnishing the stitch impressions so formed. To enable the face of the welt to be finished in this manner it was desirable that the stitches should be sunk below the face of the welt, to avoid injuring or possibly cutting the stitches in the operations of welting and burnishing.

The fudge stitch is shown in both exhibits of extension edge shoes which I have produced, Defendants' Exhibits Nos. 109 and 110. It will be observed that the fudge stitch presents a very attractive appearance, which is neater and more finished than is the edge of a shoe which has the stitches separated. In addition to this neat and attractive appearance, substantial practical advantages are secured in sewing the outsole by a fudge stitch. It is possible to make the stitches longer, since they are not visible on the top of the welt, and this effects an economy in both the amount of thread needed for a shoe and in the time required for the outsole stitching operation. It is entirely practicable to attach a sole satisfactorily and securely by longer stitches than would be permissible in a shoe as it is usually made when the stitch-separating operation is performed. A further advantage of the fudge stitch is that it is practicable to use a grade of welt which, while as strong and serviceable as the welt used in the shoes in which the stitches are separated, lacks the smooth finish which is required when the stitches are to be separated.

The United Company produced several types of mechanisms, either of which could be included in the organization of the out-sole stitcher to enable it to sew soles to the welt with the fudge stitch. The general principle of the operation of these several types was the

same. Each of them provided the machine with a knife arranged to form a slit in the upper face of the welt, and located just in advance of the needle so that the slit was formed in exactly the right location to receive each stitch as it was immediately to be made after the successive operations of the knife.

Furthermore, as it is usually desired to attach the sole with the fudge stitch only around the forepart, each of these fudge-stitch mechanisms was so organized that it was rendered operative at the same time that the extension edge mechanism was rendered operative, to provide for the proper sewing of the extension edge around the forepart.

The patents owned by the United Company which support in their claims these fudge stitch organizations are as follows:—

No. 900,925, October 13, 1908, Haradon (application filed February 4, 1907).

No. 946,591, January 18, 1910, Arnold (application filed December 8, 1905).

No. 1,017,380, February 13, 1912, Cady and Thayer (application filed October 11, 1907).

No. 1,017,397, February 13, 1912, Fletcher and Maclean (application filed March 31, 1905).

No. 1,027,791, May 28, 1912, Allen (application filed February 8, 1906).

Of the patents in the above list, Nos. 946,591, 1,017,397, 1,027,791 set forth in their claims mechanism embodied in all of the types of fudge-stitching mechanism which were supplied by the United Company with its out-sole rapid lock-stitch machine. That is the machine of 1899. The patent which sets forth such an organization in its claims in the broadest terms is No. 946,591. A typical claim of this patent is the first, which is as follows:—

"1. An outseam sewing machine, having, in combination, stitch-forming mechanism including a curved hook needle, a work support engaging the shoe externally to support the welt and outsole in proximity to the needle and a welt channeling knife located in close proximity to the path of the needle for cutting a channel in the welt in advance of the stitch forming mechanism and in proper position with relation to the stitch forming mechanism so that the

seam of stitches shall be sewn in the bottom of the channel thus cut, substantially as described."

A typical claim of patent No. 1,017,397, which also describes in its claims in general terms the type of fudge-stitch mechanisms supplied on the outsole rapid stitcher, is claim 4, which is as follows:—

"4. In a sole sewing machine the combination with stitching mechanism of means for gauging the distance of the stitch from the edge of the sole, means acting in advance of said stitching mechanism for forming a slit in the leather and means for throwing said slit forming mechanism into or out of engagement upon change in said gauging means."

The practice of making shoes with the fudge stitch, which, as I have stated, began about 1905, became very general, and by 1908 over 75 per cent of all men's black shoes and nearly all women's black shoes were fudge stitched. The practice has continued, and in substantially the same proportion, to the present day. I have no hesitation in stating that modern commercial conditions require that an out-sole stitching machine be organized to sew out-soles with the fudge stitch.

In addition to the organization for enabling the out-sole stitching machine to attach the soles by the fudge stitch, a number of other improvements were embodied from time to time in the out-sole rapid lockstitch machine of 1899. An improved bobbin-holding mechanism was adopted in May, 1905. This is defined in the claims of patent No. 1,048,565, December 31, 1912, Meyer (application filed August 16, 1905).

This mechanism was improved by the construction set forth in patent No. 1,015,023, January 16, 1912, Hatch (application filed March 10, 1910), and the improved construction was adopted in November, 1908, as a regular equipment for the machine. In 1910 an improved bobbin tension was first incorporated in this machine and it became the regular equipment for the machine in January, 1911. This improvement has also been incorporated in nearly all of the out-sole stitchers which had previously been put out. This improvement is set forth in the claims of patent No. 974,309, Nov-

ember 1, 1910, Thayer, and No. 974,757, November 1, 1910, Dow. This improved mechanism has been continued in the later models of the out-sole stitcher, which, as I have previously indicated, were adopted, respectively, in 1910 and 1912.

In July, 1909, a needle-oiling device became a part of the regular equipment of the out-sole stitcher. This improvement is set forth in the claims of patent No. 641,330, January 16, 1900, Rush, and No. 922,696, May 25, 1909, Hadaway.

In addition to the improvements which I have enumerated which were adapted for all kinds of work and, as I have stated, were incorporated as parts of the organization of the out-sole stitcher, several improvements have been made in the machine which adapted it to do special kinds of work, and which, therefore, were not needed on all machines. These special equipments were, first, a presser foot provided with a channeling knife which enabled the machine to form a channel in the out-sole to receive the stitch simultaneously with the stitching operation. This improvement is defined in the claims of the patent No. 1,048,719, December 31, 1912, Meyer (application filed April 15, 1910).

Second, a presser foot with grooving knife which adapted the machine for the kind of work known as "stitching aloft" was adopted in March, 1909. The kind of work for which this special equipment was intended is illustrated in Defendants' Exhibit 109. This improvement is defined in the claims of patent No. 1,030,767, June 25, 1912, Beckman (application filed March 18, 1910).

Third, another special equipment for the out-sole stitcher was a welt-guide which adapted the machine for attaching the soles of that class of shoes known as "stitch downs". This improvement was adopted in February, 1910, and is not as yet shown in any granted patent.

In addition to the improvements which I have enumerated, important improvements were made from time to time, during the period after February, 1899, in the wax pots which were used on this machine. The wax pot which is known as type B and which was used as early as 1899 is set forth in the claims of patent No. 732,729, July 7, 1903, French and Meyer. A steam wax pot known

as type C, which was first put out in September, 1904, is set forth in the claims of patent 930,115, August 3, 1909, Alley.

In March, 1907, a greatly improved steam wax pot known as type D was first put out. This is defined in claims of patent No. 1,015,304, January 23, 1912, Eppler (application filed February 26, 1906). Further improvements represented in what is known as type E were adopted in January, 1910, and are defined in patent No. 1,015,304, which I have just mentioned, and also in patent No. 1,023,071, April 9, 1912, Eppler (application filed November 22, 1909).

These wax pots which I have last named, types D and E, have been used exclusively on the new models of the out-sole stitcher, models K and M, and also many of the old type of out-sole stitcher, that is, the machine of 1899, which had previously been put out were equipped with these improved wax pots after their adoption.

As to the importance of these improvements in wax pots, I should explain that it is highly important that the wax through which the thread passes on its way to the stitch-forming mechanism should be kept at the right temperature. If the wax is not kept hot enough, lumps form in the wax; these get on the thread, interfere with the operation of the wax stripper and prevent proper operation of the mechanism for putting the tension on the thread. On the other hand, if the wax is kept too hot certain of its constituents will evaporate and what is left will be hard and brittle and entirely unfit for use. Further, if the wax is kept too hot, it boils over. It was a common experience when old types of wax pots were used in connection with this machine to find as much wax on the floor under the wax pot as there was in the pot.

During all this period subsequent to 1899 when, as I have explained, the out-sole rapid stitcher was being improved to enable it to do the work required by the changing commercial conditions, the United Company was carrying on experimental work with a view to producing an entirely new out-sole rapid lockstitch machine, and during this period some four or five inventors were almost constantly engaged in experimental work looking to the production of such a machine. As a result of a long period of

experimental work there was finally developed a machine which, in May, 1910, was first put out for commercial use. The official name of this machine is "Lockstitch Machine, Model K, Goodyear Outsole Rapid". For convenience I shall hereafter refer to the machine as the model K machine.

#### LOCKSTITCH MACHINE : GOODYEAR OUTSOLE RAPID, MODEL K.

This model K outsole stitcher was a radically new machine, entirely different from any out-sole stitcher ever before used. In the experimental work which resulted in the production of this machine the primary object which was aimed at was the production of a machine which would run at a much higher speed than the 1899 out-sole stitching machine, and which, by virtue of its higher speed, would have a greater capacity than that machine. It was also endeavored, in the production of this machine, so to organize it that it would do better work and would enable the operator to operate it more conveniently.

The speed of the out-sole stitching machine of 1899 was limited, under practical commercial conditions, to 375 stitches per minute. The reasons for this limit to the speed of that machine were, first, the machine was organized with an oscillating shuttle and the burden of oscillating in two directions at each operation of the machine the comparatively heavy parts which comprised this shuttle mechanism stood in the way of a high speed for this machine. Second, the machine comprised in its organization a very heavy feed slide which had to be reciprocated in two directions at each operation of the machine. It was impracticable to reciprocate this heavy feed slide more rapidly than was done when the machine was run at a speed of 375, because the wear on the parts which operated the feed slide would soon become excessive at higher speeds and the operation of that slide would become uncertain, resulting in uneven feed of the work.

Third, another serious defect in the 1899 machine when it was run at high speed was due to the overthrow of the take-up. At high speed the inertia of the parts and the tendency of all lost motion in the operating mechanism occasioned by wear of the parts

or for other reasons to concentrate at the operative end of the take-up lever, are likely to cause inaccurate operation of the take-up, so that the lock of the stitch would not be properly located.

Fourth, in the organization of the out-sole stitching machine of 1899 the presser foot was always held in pressing engagement with the work. While the mechanism which forced the presser foot against the work was yielding, the presser exerted by it had to be substantial in order to force together properly the layers of work upon which the machine was operating. When the work increased in thickness as the operation of the machine proceeded, it was necessary for the work to wedge the presser foot away from the work table, which made the operation of the awl in the work-feeding mechanism harder and also frequently caused the awl to crowd the stock in front of it, which caused uneven stitches.

Fifth, the operative parts of the 1899 machine were actuated by cams and heavy levers and many operations of the stitch-forming mechanism, especially the awl, needle and take-up, required for their proper timing in the cycle of the machine's operations very abrupt cam movements which alone made it impracticable to run the machine at high speed.

All of the objections which I have enumerated to the out-sole stitcher of 1899 and the defects in the machine which rendered it impracticable to run the machine at a high speed were overcome in the model K machine introduced in May, 1910. Referring now to the improvements which enabled that machine to be run at a higher speed, as well as to produce better work, its organization included, instead of the heavy oscillating shuttle of the 1899 machine, a constantly rotating loop-taking hook which rotated always in the same direction and was operated in combination with a stationary thread case.

It has been found very advantageous in an out-sole stitcher so to organize the stitch-forming mechanism that the needle shall enter the stock before the awl has left it, and to secure this mode of operation in the model K machine the loop-taking hook to which I have referred was arranged to rotate three times during each cycle of the machine's operations, and in one of these rotations to take the

thread from the needle and carry it around the bobbin. Other improvements to which I shall not take time to refer made this shuttle mechanism of the model K machine extremely satisfactory in operation and very convenient for the operator.

Instead of the very heavy feed slide of the 1899 out-sole stitching machine, which, as I have explained, had to be reciprocated completely 375 times per minute in the regular operation of that machine, and which rendered it impracticable to run that machine at a higher speed, this new model K machine was provided with a very light feed slide which was operated by light pivoted levers as compared with much heavier operating mechanism for the feed slide of the old 1899 machines.

I produce a feed slide of the model K machine and also a feed slide of the old 1899 machine. The feed slide of the model K machine weighs three ounces; the feed slide of the old 1899 out-sole stitcher weighs four pounds and fourteen ounces. That is, the parts which had to be reciprocated in a right line at every operation of the old lockstitch machine of 1899, 375 times a minute, weighed twenty-five times as much as the parts which have to be reciprocated in the feeding of the work in the model K machine.

[*Feed slide of model K out-sole stitcher so produced is marked "Defendants' Exhibit 111".*]

*Feed slide of out-sole rapid stitcher of 1899 so produced is marked "Defendants' Exhibit 112".]*

[*Answer to Int. 26 continued:*]

The difficulties attending the tendency of the take-up of the old out-sole stitcher, the 1899 machine, were overcome in the new model K machine by so organizing take-up of that machine that its operative end moved in the arc of a circle, so defined in relation to the stitch-forming mechanism that the operative end of the take-up always moved past a point at which it was at the greatest distance from the stitch-forming mechanism into a position of rest at which it was nearer to the stitch-forming mechanism. By this organization any overthrow of the take-up was of no importance, because it would take effect after the take-up had passed the point at which it

was at the greatest distance from the stitch-forming mechanism, and at which it had located the lock of the seam.

Associated with this improved take-up was an improved auxiliary take-up mechanism. The auxiliary take-up of the old machine was spring controlled, so that it would yield, to give up thread as required. The auxiliary take-up of the new model K machine was so organized that while yielding in its operation, as was needed, it was given positive movements to give up thread as required, and to co-operate properly with the improved take-up mechanism.

Another important advance in the organization of the model K machine over the 1899 machine was the means for lifting the presser foot to free the work from pressure during the feeding of the work by the awl. Combined with this mechanism was means for giving to the presser foot a positive compressing movement which caused it to force the stock together preparatory to the formation of the stitch.

All of the objections which I have enumerated to the presser-foot mechanism of the 1899 machine were overcome by this construction. The organization of an out-sole stitching machine by which the presser foot is operated to force together the layers of stock before the formation of the stitch is set forth in the third claim of patent No. 1,030,582, June 25, 1912, Hadaway (application filed September 29, 1904). This claim is as follows:—

“3. Presser foot mechanism for sewing machines, having, in combination, a work support, a presser foot movable toward and from the work support to accommodate stock of varying thickness, and means for positively moving the presser foot a predetermined uniform distance toward the work support from any position which it assumes in accommodating stock of varying thickness, substantially as described.”

I have endeavored to mention only those features of the organization of the model K machine which are of more striking character. Without taking time to refer to others, I will state that the machine incorporated in its organization many other improvements which contributed in the attaining of high speed, and to the successful use of the machine under commercial conditions.

The machine runs under commercial conditions at a speed of

from 540 to 550 stitches per minute. The machine is easily capable of a speed of 650 stitches per minute and, undoubtedly, will eventually be run at that speed. The machine has a capacity over the 1899 out-sole stitching machine of about thirteen per cent.

While many of the improvements embodied in this model K out-sole stitcher are not shown in patents which have as yet been granted, many improvements are set forth in general terms in the following patents: —

- No. 553,139, January 14, 1896, Smith.
- No. 563,471, July 7, 1896, French and Meyer.
- No. 675,783, June 4, 1901, Meloon.
- No. 916,092, December 8, 1908, Bayard.
- No. 922,696, May 25, 1909, Hadaway.
- No. 940,055, November 16, 1909, Plant.
- No. 940,723, November 23, 1909, Plant.
- No. 940,725, November 23, 1909, Plant.
- No. 946,591, January 18, 1910, Arnold.
- No. 963,761, July 12, 1910, Hadaway.
- No. 974,309, November 1, 1910, Thayer.
- No. 974,757, November 1, 1910, Dow.
- No. 1,015,304, January 23, 1912; Eppler (application filed February 26, 1906).
- No. 1,015,772, January 30, 1912, Ashworth (application filed November 22, 1909).
- No. 1,017,397, February 13, 1912, Fletcher and Maclean (application filed March 31, 1905).
- No. 1,023,071, April 9, 1912, Eppler (application filed November 22, 1909).
- No. 1,027,791, May 28, 1912, Allen (original application filed February 8, 1906).
- No. 1,030,582, June 25, 1912, Hadaway (application filed September 29, 1904).
- No. 1,030,742, June 25, 1912, Meyer (application filed June 16, 1902).

Mr. WEBSTER. I would like to interpose an objection here.

The petitioner objects to reference to any patents issued after the filing of the petition.

[*Answer to Int. 26 continued:*]

This model K out-sole rapid lockstitch machine, which, as I have stated, was first put out in May, 1910, superseded the machine officially known as "Lockstitch Machine, Goodyear Outsole Rapid"; that is, the out-sole rapid stitcher of 1899. A large number of these machines have been put out. During the fiscal year of the company ending March, 1912, 543 were put out into shoe factories. The United Company has always been behind in filling its orders for the machine, and in May, 1911, it was 145 machines behind its orders.

This model K out-sole stitching machine, although, as I have stated, it was put out as recently as May, 1910, was in turn superseded in January, 1912, by another model known officially as "Lockstitch Machine, Model M, Goodyear Outsole Rapid".

#### LOCKSTITCH MACHINE : GOODYEAR OUTSOLE RAPID, MODEL M.

The reason for the short life of the model K out-sole stitching machine as the standard commercial machine of the United Company was that inventors of the United Company had continued actively at work in making further improvements in machines of this type and their improvements were of such value that officials of the United Company decided that the company's commercial machine must be provided with these improvements.

The new model M machine, which, since January, 1912, has been the standard commercial out-sole stitcher put out by the United Company —

Mr. WEBSTER. Let me interpose, right there, that the petitioner objects to all evidence relating to matters occurring since the filing of the bill.

[*Answer to Int. 26 continued:*]

Let me repeat: the new model M machine, which, since January, 1912, has been the standard commercial out-sole stitcher put out by the United Company, is founded upon the model K machine, and incorporates substantially all improvements which characterize that

machine, with the addition of other important improvements to which I will now refer.

One of the most striking improvements in the model M machine, over all out-sole stitching machines previously used or known, related to the stopping of the machine. In the operation of the model K out-sole stitcher and in the operation of the out-sole stitcher of 1899, it was necessary for the operator to stop the machine by putting his hand upon the belt pulley of the machine as he neared the end of the stitch. This was a serious objection in both the 1899 machine and the model K machine, because at the time when the operator desired to stop the machine, that is, at the end of the stitching, he was finishing up the stitching in the shank, which is the most critical part of the operation of the out-sole stitcher, and he was accordingly obliged to withdraw the support of one hand from the shoe at that critical stage in the operation on the shoe. This objection, while serious in the 1899 machine, was still more serious in a high-speed machine because the operator would be obliged to allow more time for the stopping of the machine, and accordingly to withdraw the support of one hand from the shoe at a time when more of the work remained to be done in the shank.

These objections to prior machines were overcome in the new model M out-sole stitcher, that is, the present commercial machine of the United Company, by an improvement which automatically stops the machine at the desired point. This improvement comprises a mechanism which, at whatever speed the machine may be running at the time the operator wishes to stop it, first reduces the speed to a pre-determined low speed, and then automatically stops the machine at the proper time in the cycle of its operations, always at the same point.

I should explain that the incorporation of this improvement in the model M out-sole stitcher was due to the fact that Thomas G. Plant had provided out-sole stitching machines with an automatic stopping mechanism, and observation of the Plant machine had led inventors of the United Company to believe that a successful mechanism for stopping the machine, something which had long

been desired but had never before been provided in the out-sole stitching machine, could be devised which would operate satisfactorily. The Plant mechanism was far from satisfactory as it was not a good mechanical arrangement and occasioned much trouble through breakage. After the acquisition of the Plant patents by the United Company, in September, 1910, five different inventors employed by the United Company were put to work upon the problem of providing a commercially satisfactory stopping mechanism which could be incorporated in the organization of the model K out-sole stitcher, which was then the standard commercial machine of the United Company. The mechanism finally produced by the joint work of these five inventors was that which I have described and was entirely different in structure and mode of operation from the Plant mechanism. The organization of the model M out-sole stitching machine, which provides for this automatic stopping always at the same point in the cycle of the machine's operation, is not shown in any patent which has as yet been granted, but is defined in general terms in patent No. 710,612, October 7, 1902, Richardson. A typical claim of this patent is No. 29:—

"29. A sewing machine having a driving shaft adapted to stop at a fixed point in its rotation, means for stopping said shaft at said fixed point, stitching mechanism connected to and operated by said shaft, two driving mechanisms, rotating at different pre-determined speeds for driving said shafts, and manually controlled devices for connecting either of said driving mechanisms, with said shaft, and for causing the actuation of the stopping means."

To indicate the practical importance of this stopping mechanism as well as to suggest one of the problems which had to be met in producing it, I will explain that in the operation of an out-sole stitching machine the operator usually desires when sewing the out-sole at different parts of the shoe to run the machine at different speeds, and it is necessary that any automatic stopping mechanism shall be so organized that it will operate always in the same way and always stop the machine at the same point in its cycle of operations, at whatever speed the machine be running; whether, for example, it be running at a speed of 200-stitches per minute or at a speed of 500 stitches per minute. Obviously, however, the

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momentum of the parts of the machine at a speed of 200 is much less than the momentum of those parts at a speed of 500.

Another important and valuable improvement embodied in the model M machine comprises the mechanism for automatically lifting the presser foot when the machine stops. In explaining the improvements over the 1899 machine which were embodied in the model K machine, that is, the immediate predecessor of the model M machine, I stated that the model K machine was so organized that the presser foot was lifted during each feeding operation, so that it had the important advantage over the 1899 out-sole stitching machine that it was not necessary to feed the work against the pressure of the presser foot. In the use of the model K machine, however, as in the use of the 1899 machine, it was necessary for the operator when he had finished the operation upon each shoe to lift the presser foot by hand, engaging a hand lever for that purpose. He had to repeat this operation when he began to sew the next shoe, so that he had to lift the presser foot manually twice for each shoe presented to the machine. The model M machine was so organized that when the machine stopped the presser foot was automatically lifted and remained in raised position until the machine was again started with a shoe in position for the stitching operation, when the presser foot descended and held the shoe properly for the stitching operation. This improvement contributed greatly to the convenience of the operator. As I have explained, in the older machines he had to raise the presser foot manually twice for every shoe.

In addition to obviating this difficulty, his convenience was facilitated because he was able to hold in his hand throughout the operation on each shoe the knife which he must use at the completion of the operation to sever the thread. In the use of prior machines it was necessary for the operator before he could free the shoe from the machine to reach for the hand knife, cut the thread and then move his hand again to put the knife down. By the improvement to which I am now referring, combined with the automatic stopping of the machine which made it unnecessary for the operator to take his left hand off the shoe to stop the machine,

the machine was made so convenient for the operator that it was entirely practicable for him to hold the knife in his hand throughout the operation upon the shoe.

This improved presser-foot organization of the commercial model M machine is not as yet shown in a granted patent, but one of its features is set forth in broad terms in patent No. 710,613, October 7, 1902, Richardson, of which claim 16 is as follows:—

“ 16. A machine of the character described comprising a presser-foot resting on the surface of the work and adjusted automatically thereby, mechanism for locking said presser-foot in operative position, and a stop mechanism controlling the operation of the machine, said parts being arranged and operated whereby the presser-foot is automatically released when the stop motion is actuated to stop the machine, whereby the said presser-foot is then free to be moved manually.”

The organizations of the model M out-sole stitching machine, the present commercial out-sole stitching machine supplied to manufacturers by the United Company, is not shown as a whole or in any of its parts in any patents which have as yet been granted, but the general organization and many important features of the organization are set forth in general terms in the following patents owned by the United Company:—

- No. 553,139, January 14, 1896, Smith.
- No. 563,471, July 7, 1896, French and Meyer.
- No. 675,783, June 4, 1901, Meloon.
- No. 710,612, October 7, 1902, Richardson.
- No. 710,613, October 7, 1902, Richardson.
- No. 906,092, December 8, 1908, Bayard.
- No. 922,696, May 25, 1909, Hadaway.
- No. 940,055, November 16, 1909, Plant.
- No. 940,723, November 23, 1909, Plant.
- No. 940,725, November 23, 1909, Plant.
- No. 946,591, January 18, 1910, Arnold.
- No. 963,761, July 12, 1910, Hadaway.
- No. 974,309, November 1, 1910, Thayer.
- No. 974,757, November 1, 1910, Dow.

No. 1,015,304, January 23, 1912, Eppler (application filed February 26, 1906).

No. 1,015,772, January 30, 1912, Ashworth (application filed November 22, 1909).

No. 1,017,397, February 13, 1912, Fletcher and Maclean (application filed March 31, 1905).

No. 1,023,071, April 9, 1912, Eppler (application filed November 22, 1909).

No. 1,027,791, May 28, 1912, Allen (application filed February 8, 1906).

No. 1,030,582, June 25, 1912, Hadaway (application filed September 29, 1904).

Attention should be called to the fact that both the model K out-sole stitching machine, that is, the machine introduced in 1910, and the model M machine, the present standard commercial machine of the United Company, are provided with organizations for sewing extension edges and for attaching out-soles with the fudge stitch. These mechanisms are set forth in broad terms in the claims of several patents which I discussed in connection with the out-sole stitching machine of 1899, and in addition these mechanisms have been improved in the model K and model M machines. The improved mechanisms are not shown in any patents which have as yet been granted.

The model M out-sole stitching machine has been received by shoe manufacturers with even greater favor than its immediate predecessor, the model K machine. The model M machine represents a great advance in the industry. Owing to its speed, which, like the model K machine, is from 540 to 560 stitches per minute, as compared with 375 stitches per minute for the 1899 out-sole stitching machine, and to the striking improvements to which I have referred which do away with several manual operations which the operator of the machine had to perform for every shoe which he stitched upon the 1899 machine, or the model K machine, which operations are all performed automatically by the model M machine, and owing to the great saving of the operator's time which is effected by the model M machine, as I have pointed out in some

detail, this model M machine, the present commercial machine, has an increased capacity of eight per cent over its immediate predecessor, the model K machine, and its capacity is about twenty-two per cent greater than that of the 1899 machine. The success of the machine is indicated by the fact that although it was first put out for commercial use as recently as January, 1912, 985 of the model M machines were in commercial use in shoe factories on September 1, 1913. The facilities of the company's factory for building this machine have been overtaxed all the time since it was introduced, and on the 1st of January, 1913, the company was 256 machines behind in filling its orders for model M machines.

I produce copies of patents which I have mentioned in the foregoing deposition relating to out-sole stitching machines. For convenience these patents have been bound in one volume.

[*Patents relating to out-sole stitching machines, used by the witness, are offered in evidence and marked "Defendants' Exhibit 113".*]

*Int.* 27. Will you kindly read into the record the number, date and name of the patentee of each of those patents?

*Ans.* No. 127,423, June 4, 1872, Mills.

No. 253,156, January 31, 1882, Campbell.

No. 424,966, April 8, 1890, French and Meyer.

No. 473,870, April 26, 1892, French and Meyer.

No. 474,774, May 10, 1892, French and Meyer.

Reissue No. 11,578, reissued December 8, 1896, Hadaway.

No. 553,139, January 14, 1896, Smith.

No. 563,471, July 7, 1898, French and Meyer.

No. 563,472, July 7, 1896, French and Meyer.

No. 582,510, May 11, 1897, Shriner and Adams.

No. 641,330, January 16, 1900, Rush.

No. 675,783, June 4, 1901, Meloon.

No. 704,457, July 8, 1902, Hadaway.

No. 704,458, July 8, 1902, Hadaway.

No. 710,612, October 7, 1902, Richardson.

No. 710,613, October 7, 1902, Richardson.

No. 732,729, July 7, 1903, French and Meyer.

- No. 900,925, October 13, 1908, Haradon.  
No. 906,092, December 8, 1908, Bayard.  
No. 922,696, May 25, 1909, Hadaway.  
No. 930,115, August 3, 1909, Alley.  
No. 940,055, November 16, 1909, Plant.  
No. 940,723, November 23, 1909, Plant.  
No. 940,725, November 23, 1909, Plant.  
No. 946,591, January 18, 1910, Arnold.  
No. 963,761, July 12, 1910, Hadaway.  
No. 974,309, November 1, 1910, Thayer.  
No. 974,757, November 1, 1910, Dow.  
No. 1,015,023, January 16, 1912, Hatch.  
No. 1,015,304, January 23, 1912, Eppler.  
No. 1,015,772, January 30, 1912, Ashworth.  
No. 1,017,380, February 13, 1912, Cady and Thayer.  
No. 1,017,397, February 13, 1912, Fletcher and Maclean.  
No. 1,023,071, April 9, 1912, Eppler.  
No. 1,027,791, May 28, 1912, Allen.  
No. 1,030,582, June 25, 1912, Hadaway.  
No. 1,030,742, June 25, 1912, Meyer.  
No. 1,030,767, June 25, 1912, Beckman.  
No. 1,048,565, December 31, 1912, Meyer.  
No. 1,048,719, December 31, 1912, Meyer.

**Mr. WEBSTER.** Please note the objection of counsel for petitioner to the exhibits so far as the patents issued after the date of the filing of the petition are concerned, these having no bearing touching allegations of the bill.

#### ROUNDING AND CHANNELING MACHINES.

*Int.* 28. What was the function of a rounding and channeling machine like the Universal machine referred to by Mr. Chapman?

*Ans.* This machine was used to shape the sole of a welt shoe and to form simultaneously the channel to receive the outseam which was subsequently to attach the sole to the welt, and the operation was performed after the out-sole had been "laid", that is, temporarily attached to the shoe by cement, so that the shaping of the

sole and the forming of the channel was performed by the machine while the sole was on the shoe, and the operation of the machine was performed to adapt the shape of the sole and the location of the channel for the particular shoe and in relation to the shape of the last. Before it was operated upon by the rounding and channelling machine the sole was usually in the form of a "blocked sole", as is shown by the Defendants' Exhibit 102.

*Int.* 29. Mr. Chapman has compared the machine represented in Complainant's Exhibit 233, which is a machine of the Goodyear manufacture, with Briggs patent No. 463,982, dated November 24, 1891, and with French and Meyer patents 600,883, March 22, 1898, and 599,602, February 22, 1898. Describe briefly the subjects-matter of those several patents as the same are embodied in the machine represented by the Complainant's Exhibit 233?

*Ans.* The first of the patents referred to by Mr. Chapman, No. 463,982, November 24, 1891, Briggs, represents a step in the development of the machine which was known as the "Briggs rounding machine", the commercial form of which is shown in patent No. 511,263, December 19, 1893, Briggs and Dancel. That machine, that is, the Briggs rounding machine, was put out for a time, but about 1896 was superseded by the Goodyear Universal rounding and channelling machine.

#### ROUNDING AND CHANNELING MACHINE — GOODYEAR UNIVERSAL.

The commercial form of this Universal machine as it was put out by the Goodyear Company after 1896 is shown in patent No. 599,602, February 22, 1898, French and Meyer, which patent was also referred to by Mr. Chapman. The machine embodied mechanisms set forth in that patent No. 599,602, and also in the other patent referred to by Mr. Chapman, No. 600,883, March 22, 1898, Meyer and French. The commercial machine may also be fairly regarded as embodying mechanisms defined in the first two claims of the first patent referred to by Mr. Chapman, No. 463,982, November 24, 1891, Briggs.

I cannot, however, agree with Mr. Chapman that that machine embodied the mechanism set forth in the third claim of that Briggs

patent No. 463,982. The mechanism recited in that claim has never been incorporated in the Universal rounding and channeling machine at any time since that machine was produced, and is entirely different from the corresponding mechanism in the Universal machine.

*Int. 30.* State whether or not in rounders and channelers of the United Company in 1889 there were embodied the subjects-matter of any other patents of the United Company than those named by Mr. Chapman; if so, what were those patents?

*Ans.* The Briggs rounding machine, which, as I have stated, was superseded about 1896 by the Goodyear Universal rounding and channeling machine, was not organized to form extension edges. As I have heretofore explained fully in my deposition in regard to the out-sole stitching machine, about 1895 there was a radical change in methods of making shoes, owing to the fact that manufacturers began to make shoes with extension edges, and this occasioned a demand on the part of manufacturers for machines which would enable them to make by machinery these extension edge shoes which had previously been made by hand, so that only the more expensive shoes were provided with extension edges.

A number of inventors, including several not connected in any way with the Goodyear Shoe Machinery Company, went to work independently to solve the problem of providing a rounding and channeling machine which could be used in the manufacture of extension edge shoes. These inventors filed applications upon the mechanisms which they had produced for enabling a rounding and channeling machine to shape the soles of extension edge shoes, and there were numerous interferences in the Patent Office involving these applications. Two general types of mechanisms were developed by these inventors; one comprising a crease guide which was so incorporated in the organization of the rounding and channeling machine that it entered the crease between the welt and upper and was arranged to be moved to vary the position of the cut made by the rounding knife with relation to the edge of the last. The other type of mechanism for this purpose comprised two guides, one a crease guide which was stationary, and the other a guide for

engaging the upper above the crease guide and for varying the position of the shoe with relation to the rounding knife as required by the work. As I explained in my deposition regarding out-sole stitching machines, it is usually desired to form the extension edge around the forepart only, and it is also generally desired to provide the sole with a narrow edge in the shank.

I have for convenience used the expression "stationary crease guide" to distinguish it from the relatively movable upper guide in the second type of mechanism which I described. It should not, however, be inferred from this expression which I have adopted for convenience that the crease guide of the commercial machine has no movement.

In the Patent Office interference involving the combination of the crease guide and a relatively movable upper guide, which interferences involved the application for the Meyer and French patent No. 600,883, which was referred to by Mr. Chapman, priority of invention was awarded to Edward M. Cole, of Chicago, on whose application was issued patent No. 595,764, December 21, 1897, Cole. That patent was, after it was granted, assigned to the Goodyear Shoe Machinery Company. Typical claims of this Cole patent, which defined mechanisms which have always been embodied in the Goodyear Universal rounding and channeling machine, and which are embodied in machine No. 408 which is shown in the photograph Plaintiff's Exhibit 233, are claims 1 and 8, which are as follows:—

"1. A fixed guiding device for controlling the location of a shoe while being operated upon by rounding and channeling tools, an adjustable guiding device adapted to interpose so as to force the shoe farther from the said tools, and means for advancing and retracting said adjustable guiding device while the tools are in operation."

"8. In a machine for operation upon the soles of boots and shoes, two independent guides, one working along the shank portion, and the other around the fore part."

The other type of extension edge organization produced for rounding and channeling machines, that characterized by a single crease guide which was movable to locate the shoe properly in

relation to the rounding knife, was the subject-matter of interference in the Patent Office, in which interferences the application for the French and Meyer patent No. 600,883, which was referred to by Mr. Chapman, was also involved. In these interferences priority of invention was awarded to Frederick L. Alley, upon whose application was granted patent No. 625,663, May 23, 1899, Alley. The claims of the Alley patent which are directed to this single gauge organization do not set forth mechanism which is embodied in the commercial Goodyear rounding and channeling machine, but the Alley patent does contain several claims which set forth mechanism commercially used in that machine, and of these claims a typical claim is the following:—

“ 1. In a rough rounding and channeling machine, the combination with the throat plate, of a movable gauge forming an independently adjustable longitudinal extension thereof, substantially as described.”

Like the mechanism set forth in the claims of the Cole patent No. 595,764, to which I have referred, the mechanisms set forth in the first three claims of this Alley patent No. 625,633 have always been embodied in the commercial Goodyear Universal rough rounding and channeling machine and are embodied in machine No. 408, which is the machine shown in Plaintiff's Exhibit 233, as I have determined by an examination of that machine in the factory of the Commonwealth Shoe & Leather Company at Whitman.

The Goodyear Universal rounding and channeling machine as put out by the Goodyear Company prior to 1899, and by the United Company in 1899, also embodied the mechanisms defined in the claims of patent No. 630,339, August 8, 1899, French and Meyer. The mechanism of this patent constituted an improvement upon the mechanism shown, described and claimed in the patent No. 595,764, December 21, 1897, Cole, to which I have already referred.

This mechanism consisted in a cam which automatically determined the position of the upper guide with relation to the crease guide as the operation of the machine proceeded around the shoe.

*Int. 31.* State whether or not since 1899 there have been any

modifications or improvements in the rounders and channelers of the United Company. If so, what were they and what was their importance? If the same formed the subjects-matter of Letters Patent of the United Company, name the patents.

*Ans.* By far the most important advance made in the machine since 1899, has been the production in December, 1910, of a radically new and improved rounding and channeling machine known as "Rounding and Channeling Machine, Goodyear Universal, Model E", which was produced after several years of experimenting, as I shall later explain. Before discussing that machine, however, I will mention some improvements which were from time to time adopted in the Universal rounding and channeling machine as it was put out in 1899. These improvements enabled that machine to do certain kinds of work for which it had not been adapted prior to the adoption of the respective improvements.

The first of these improvements was a mechanism which was incorporated in the machine of 1900 and enabled the machine to prepare the sole for that kind of out-sole stitching which is known as "stitching aloft", and comprised means which could be actuated by the operator as the operation of the machine progressed around the shoe for throwing the channeling knife out of operation around the forepart. In making shoes in the manner which is known as "stitching aloft" it is usually desired that the stitches shall be located in a channel in the shank, but shall be placed upon the surface of the stock or in a groove in the forepart. This improvement is set forth in the claims of patent No. 579,144, March 23, 1897, Gifford, and No. 684,359, October 8, 1901, Eaton. Claim 3 of the Gifford patent, which defines this invention in broad terms, is as follows: —

"3. In a machine for operating upon the soles of boots and shoes, the combination of a movable trimming knife for operating upon the edge portion of the sole, a movable tool for operating upon the bottom of the sole, connected mechanisms for actuating the knife and tool, and means controlled by the operator for throwing the tool out of operation during the operation of the knife, substantially as described."

A typical claim of patent No. 684,359, all of the seven claims of

which describes this improvement, is claim 1, which is as follows:—

“ 1. In a rough rounding and channeling machine, the combination with a rounding knife, of a channeling knife, movable into and out of operation substantially in the plane of the bottom of the sole, substantially as described.”

In 1903 mechanism was adopted by this machine which would enable all those manufacturers who desired to produce close edges around the forepart, as distinguished from extension edges, to round and channel their shoes upon this machine. That improvement is shown and is described in the claims of patent No. 845,-277, February 26, 1907, Thayer.

A typical claim of this patent is claim 1:—

“ 1. A sole rounding machine, having, in combination, a trimming knife, a shank guide, a forepart guide movable into and out of engagement with the shoe, and means for relatively moving the shank guide and trimming knife to allow the forepart of the sole to be trimmed closer to the upper than the shank portion, substantially as described.”

In June, 1908, an improvement was made in the machine which had for its object the enabling of the operator to modify the operation of the automatic pattern cam, as the operation of the machine progressed around the forepart. This improvement is illustrated in the drawings and set forth in all of the ten claims of patent No. 1,010,854, December 5, 1911, Cady.

While this Goodyear Universal rounding and channeling machine was satisfactory to shoe manufacturers and was used very extensively after 1899, it was realized by experts of the United Company that the machine had serious defects which ought to be remedied. One of the most serious of these defects was that the cam, which, as I have explained, automatically controlled the position of the upper guide in relation to the crease guide, and so automatically positioned the shoe in the progress of the work, was adapted to operate properly only for a medium sized shoe, so that the machine was not organized properly to round and channel either sizes larger than the medium or sizes smaller than the medium. In the operation of the machine it was the practice for

operators to force the shoe ahead faster than it would normally be fed by the machine when operating upon a large size, and to hold a shoe back against the feeding operation when operating upon shoes smaller than the medium size. This defect of the machine imposed so great a burden upon the skill and judgment of the operator that the machine has always required for its operation the most skilled operators which are employed in shoe factories.

Another unsatisfactory feature of the Universal rounding and channeling machine, that is, the machine of 1899, was that whenever the shoes coming to the machine were to have their soles rounded with a different contour from those upon which the machine had been operating, it was necessary to change the cam which controlled the position of the upper guide, and this change, which, owing to the great variety in shapes desired for extension edge soles, had to be made frequently, required from seven to ten minutes' time, as the machine had really to be taken apart to some extent in order to substitute a cam which would be suited for the new class of work.

One of the company's inventors, Frederick H. Perry, explained to the company's officials and experts some ideas which he had for effecting substantial improvements in machines of this class. His plans were approved and he was authorized to proceed with the development of an entirely new rounding and channeling machine. His experimental work began in May, 1905, and had for its general objects the production of a machine which would operate at a higher speed than the Universal rounding and channeling machine, and which would, therefore, have an increased capacity over that machine, which would do better work than the 1899 machine and which would be more convenient for the operator.

#### ROUNDING AND CHANNELING MACHINE — MODEL E, GOODYEAR UNIVERSAL.

After several years of experimenting and the production of a number of experimental machines Mr. Perry succeeded in producing, in 1910, a machine which was commercially satisfactory, and the first machine was put out for commercial use in December,

1910, being known officially as "Rounding and Channeling Machine, Goodyear Universal, Model E". This machine ran at speed of 850 cuts per minute on the average, as compared with an average speed for the 1899 machine of about 650. This speed, combined with numerous improvements contributing to the convenience of the operator and saving much of his time which had been required in making adjustments to adapt the old machine for changes in the character of the work to be done, secured an average output for this model E machine of about 1500 pairs per day as compared with an average output for the 1899 machine of about 1200 pairs per day.

Among the improvements which contributed to this greatly increased capacity of the new model E machine was mechanism for automatically controlling the forepart guide to enable it to operate accurately for any size. As I have before explained, the mechanism of the 1899 machine which controlled the operation of the forepart guide, was adapted for one size only, that is, a medium size. The new model E machine was so organized that the machine could be instantly adapted for any size of shoe. This mechanism comprised a variable speed-driving mechanism for operating the pattern cam, which mechanism could be instantly set by the operator to adapt the machine so that the position of the forepart guide, which determines the distance of the rounding out from the edge of the last, would be right at a given point in the operation of the machine, whatever the size of the shoe. This mechanism is set forth in broad terms in the claims of patent No. 878,478, February 4, 1908, English, a patent which was acquired by the United Shoe Machinery Company in September, 1910, from Thomas G. Plant. Claim 51 of this patent is typical of the claims setting forth this improvement and is as follows:—

"51. In a rounding machine, a trimming knife, a guide co-operating therewith, means including a moving pattern to vary the relative position of said knife and guide to produce an extension on the edge of the sole, and a variable speed driving mechanism for the pattern."

The objection to the old machine, that is, the 1899 machine, that

so much time was required to change the machine when it had to operate upon shoes having edges of different contours from those on which it had been operating, when it was necessary for the operator to spend from seven to ten minutes in changing the pattern cam, as I have explained, were overcome in the new model E machine, the present commercial machine, by including in the organization of the machine 12 pattern cams of varying contours with means by which the mechanism for controlling the position of the upper guide could be changed from the control of one cam to the control of another cam in three seconds, as compared with the seven to ten minutes required for a corresponding change in the old machine. This improvement is set forth in many of the claims of patent No. 1,030,607, June 25, 1912, Perry (application filed December 11, 1908), of which claims 1 and 4 are typical.

"1. A machine for operating on the soles of shoes, having, in combination, a tool, a gauge, means for throwing the gauge into action during the relative travel of the tool about the shoe, a plurality of means for relatively actuating the tool and gauge, constructed and arranged to impart relative movements to the gauge and tool for shoes of different relative styles, and means for rendering any one of said means operative, substantially as described."

"4. A sole rounding or channeling machine, having, in combination, a knife, a gauge, means for throwing the gauge into action during the relative travel of the knife about the shoe, means for relatively actuating the gauge and knife comprising a plurality of cams and intermediate connections constructed and arranged to impart different relative movements to the gauge and knife for shoes of different styles, and means for rendering any one of said cams operative, substantially as described."

The first patent which disclosed mechanism comprising a plurality of cams each of which could be arranged to control the position of the forepart guide in a rounding and channeling machine was No. 682,679, September 17, 1901, Fowler, which patent is owned by the United Shoe Machinery Company. Claim 1 of this patent, which defines in general terms the improvement in the model E machine which I am discussing, is as follows:—

"1. A machine for operating on the soles of shoes, having, in combination, a suitable tool, a gauge, a plurality of means for relatively actuating the tool and gauge to vary the distance from the

inseam at which the tool acts on the sole, said plurality of means being constructed and arranged to impart different relative movements to the gauge and tool for shoes of different sizes or styles, and means for rendering any one of said means operative, substantially as described."

In the operation of the old rounding and channeling machine, that is, the machine of 1899, it was necessary for the operator after the operation of the machine upon one shoe had been finished, to manually adjust the mechanism for operating the pattern cam so that the pattern cam would reverse its movement in operating upon the next shoe, which would be a shoe for the other foot; that is, the pattern cam traveled in one direction for a right shoe, and in the opposite direction for a left shoe, and had to be reversed manually at the end of each operation. The convenience of the operator was greatly facilitated by an improvement in the new model E machine, which consists in means for automatically reversing the pattern mechanism at the end of the operation of the machine upon each shoe so that when the operator has finished one shoe the mechanism automatically adjusts itself for a proper operation upon the next shoe without the slightest thought or attention on the part of the operator.

This improvement is shown in the drawings and set forth in many of the claims of patent No. 1,030,606, June 25, 1912, Perry (application filed May 4, 1910), which patent illustrates in its drawings the machine in substantially its commercial form, although some improvements on which patents have not yet been granted are embodied in the commercial machine.

Of those claims which define the invention which I have just explained, typical claims are 18 and 22, which are of follows:—

"18. A machine for operating on shoe soles, having, in combination, a tool, a guide, pattern mechanism for relatively actuating the tool and guide to determine the path along which the tool operates, mechanism for actuating the pattern mechanism, and mechanism acting to automatically set the actuating mechanism to move the pattern mechanism alternately in opposite directions, substantially as described."

"22. A machine for operating on shoe soles, having, in combination, a tool, a guide, a pattern mechanism for relatively actu-

ating the tool and guide to determine the path along which the tool operates, mechanism for actuating the pattern mechanism in opposite directions for right and left shoes, and mechanism for alternately setting the actuating mechanism for right and left shoes, substantially as described."

An improvement in the machine which effected substantial economy for the manufacturer was the use of wood patterns instead of metal patterns which were used in the machine of 1899. The metal cams of the 1899 machine cost \$1 each; the pattern cams for the model E machine, which are made of laminated wood, cost fifteen cents each. These wooden pattern cams are made from the pattern of the sole which it is desired to produce in the operation of the machine. The patterns are made by a machine known as "Generating Machine, Goodyear Pattern", which is set forth in general terms in the claims of patent No. 1,027,562, May 28, 1912, Perry (application filed February 12, 1908), and in patent No. 1,064,118, June 10, 1913, Allen (application filed October 11, 1909). A typical claim setting forth this mechanism is claim 29 of patent No. 1,027,562, which is as follows:—

"29. In a machine of the class described, means to be engaged movable and concurrently with a plurality of differently shaped regions of a model; and means controlled by said model engaging means to impart to the periphery of a disc a contour embodying the relative variations in contour of said engaged model regions."

I produce one of the metal pattern cams used on the 1899 machine which, as I have stated, costs \$1. A different cam is required for every variation in the shape in the contour of the extension edge.

[*Metal pattern cam for 1899 machine was introduced in evidence and marked "Defendants' Exhibit 114".*]

[*Answer to Int. 31 continued:*]

I also produce one of the laminated wood cams used on the model E rounding and channeling machine, the present commercial machine, which, as I have explained, costs fifteen cents each.

[*Wooden pattern cam for Universal rounding and channeling machine model E was introduced in evidence and marked "Defendants' Exhibit 115".*]

[*Answer to Int. 31 continued:*]

Another important improvement in the new model E rounding and channeling machine consisted in the mechanism for clamping the work between the cutter blade and the shoulder knife block. Such clamping of the work is characteristic of both the old machine, the 1899 machine, and the new model E machine, and in the old machine the operating mechanism for effecting this clamping was so organized that the pressure increased substantially when the work increased in thickness. This was very objectionable because during the movement of the channel knife block in the channel cutting operation the work is held clamped between the cutter plate and the channel knife block and a substantial increase in pressure increases the friction which must be overcome in the operation of the machine. This construction was further objectionable in the 1899 machine because, as I have already suggested, the operator of that machine, owing to the fact that the pattern cam was shaped only for a medium sized shoe, had to push on the shoe all the time when he was operating upon a larger shoe, and had to pull back on the shoe all the time that he was operating upon a smaller sized shoe, and this pushing and pulling was exerted against the stress of the strong spring which caused the clamping of the work between the channel knife block and the cutter plate. In the new model E machine the pressure exerted in this clamping of the stock is uniform whatever the thickness of the stock, and the convenience of the operator is greatly facilitated by this improvement. Among the claims in patent No. 1,030,606, June 25, 1912, Perry (application filed May 4, 1910), which set forth this invention, a typical claim is 35, which is as follows:—

"35. A machine for operating on shoe soles, having, in combination, a sole support, and a spring for holding the support against the sole of a shoe arranged to maintain a substantially constant pressure upon soles of varying thickness, substantially as described."

In addition to the several improvements to which I have specifically referred, it should be stated that the general organization of this new model E machine is adapted to afford every convenience

to the operator in the use of the machine, and particularly to save the operator's time which, in the use of the old machine of 1899, had to be devoted so largely to adjusting or changing the machine to adapt it for changing conditions in the work. In the new model E machine every possible variety of the work is provided for in the machine as regularly constructed. To adapt the machine from one class of work to an entirely different class of work the operator needs only to effect a quick adjustment which is provided for in the machine, while, in changing the 1899 machine to adapt it for any special kind of work, it was frequently necessary to put an attachment on the machine which, when it was on the machine, limited the utility of the machine to the special class of work for which the attachment was intended, and which, when the operator had finished that special work, must be removed before the machine could be used for any other class of work.

The commercial model E machine is constructed substantially as shown in patent No. 1,030,606, June 25, 1912 (application filed May 4, 1910). All of the 61 claims in that patent set forth mechanisms which were incorporated in the machine until September, 1912, at which date the features covered by claims 1 to 17 of the patent were discontinued as it was found that the mechanism set forth in those claims was no longer needed under commercial conditions. Twenty-five of the 31 claims of patent No. 1,030,607, June 25, 1912, Perry (application filed December 11, 1906), also set forth mechanisms which are embodied in the commercial model E machine. The subject-matter of the other six claims of that patent, which, although of later number than No. 1,030,606, shows an earlier stage in the development of the machine, were superseded by improved mechanisms as shown and defined in the claims of patent No. 1,030,606.

The commercial model E rounding and channeling machine embodies mechanisms defined in the claims of the following patents:—

No. 579,144, March 23, 1897, Gifford.

No. 595,764, December 21, 1897, Cole.

No. 599,602, February 22, 1898, Meyer and French.

- No. 600,883, March 22, 1898, French and Meyer.  
No. 625,633, May 23, 1899, Alley.  
No. 630,338, August 8, 1899, French and Meyer.  
No. 630,339, August 8, 1899, French and Meyer.  
No. 682,679, September 17, 1901, Fowler.  
No. 808,628, January 2, 1906, Brainard.  
No. 845,277, February 26, 1907, Thayer.  
No. 878,475, February 4, 1908, Alley.  
No. 878,478, February 4, 1908, English.  
No. 1,030,607, June 25, 1912, Perry (Application filed December 11, 1908).  
No. 1,030,606, June 25, 1912, Perry (Application filed May 4, 1910).

Model E rounding and channeling machine has been very successful. It has entirely superseded the machine of 1899, that is, the Goodyear Universal rounding and channeling machine. Eight hundred and thirty-two of these machines were in shoe factories on September 1, 1913. It should be noted that one of these machines can easily round and channel shoes enough to run four welt-ing machines to their capacity. The number of these model E machines out on September 1, 1913, may be compared with the 230 Universal rounding and channeling machines which were in use in February, 1899.

This machine is put out by the United Shoe Machinery Company, through its Goodyear department.

Mr. WEBSTER. Please note the petitioner's objection to all that portion of the answer which relates to what others said, did, or thought; also all that portion which relates directly or indirectly to patents and mechanisms of patents shown in patents issued after the date of the filing of the petition herein, all the same being incompetent, inadmissible, and having no bearing on the questions involved in this case.

*Int. 32.* Have you, at the request of counsel, collected in a volume the patents referred to by you as relating to rough rounding and channeling machines?

*Ans.* I have, and I now produce a volume including copies of

all of the patents to which I referred in my deposition. The rounding and channeling machine is and has been since February, 1899, put out by the United Shoe Machinery Company through its Good-year department.

[*Volume of patents produced by the witness is offered in evidence and marked "Defendants' Exhibit 116".*]

Mr. WEBSTER. The petitioner objects to the introduction of all patents dated after the date of the filing of the petition herein.

Int. 33. Will you please state the number, date and name of the patentee of each of the patents contained in the volume Exhibit 116?

- Ans. No. 463,982, November 24, 1891, Briggs.  
No. 511,263, December 19, 1893, Briggs and Dancel.  
No. 579,144, March 23, 1897, Gifford.  
No. 595,764, December 21, 1897, Cole.  
No. 599,602, February 22, 1898, French and Meyer.  
No. 600,883, March 22, 1898, Meyer and French.  
No. 625,633, May 23, 1899, Alley.  
No. 630,339, August 8, 1899, French and Meyer.  
No. 682,679, September 17, 1901, Fowler.  
No. 684,359, October 8, 1901, Eaton.  
No. 845,277, February 26, 1907, Thayer.  
No. 878,475, February 4, 1908, Alley.  
No. 878,478, February 4, 1908, English.  
No. 1,010,854, December 5, 1911, Cady,  
No. 1,027,562, May 28, 1912, Perry.  
No. 1,030,606, June 25, 1912, Perry.  
No. 1,030,607, June 25, 1912, Perry.  
No. 1,064,118, June 10, 1913, Allen.

[*Adjourned to 10 A. M., Wednesday, October 8, 1913.*]

BOSTON, MASS., October 8, 1913.

INSOLE CHANNELING MACHINES.

*Int. 34.* What is the function of an insole channeler in the manufacture of shoes?

*Ans.* An insole channeler is used to prepare the insole of a welt shoe for the lasting and welt-sewing operations, and is also with somewhat different organization used for preparing the soles of turned shoes for the lasting and sewing operations. In operating upon a welt insole, the insole channeler makes on the flesh side of the insole two cuts, one extending from the edge of the insole inward toward the middle of the sole, and the other beginning inside of the edge and extending downwardly and obliquely toward the first cut. These two cuts together define and produce the "between substance" to which the welt and upper are secured in the welt-sewing operation. Before the lasting and welt-sewing operations the lip formed by the outer cut is turned up and back. In operating upon a turn sole the machine makes an inner cut or slit substantially like the corresponding cut or slit made in channeling the welt insole. But the operation at and adjacent to the edge of the turn sole differs from the operation upon the welt insole in that the stock at the edge of a turn sole from the beginning of the cut to its end and extending from the end of the cut to the face of the flesh side is entirely removed, thus leaving a shoulder to which the upper is secured in the subsequent operation of sewing the upper of a turn shoe while the shoe is wrong side out. I produce a welt insole and a turn sole which have been operated upon by an insole channeling machine in the manner above indicated.

[*Channeled welt insole introduced in evidence, and marked "Defendants' Exhibit 117".*

*Also channeled turn sole introduced in evidence, and marked "Defendants' Exhibit 118".*]

*Int. 35.* Mr. Chapman, in his answers to questions 62, 63 and 64, compares the cut on page 95 of Plaintiff's Exhibit No. 220 with the insole channeling machine shown in the photograph in Plain-

tiff's Exhibit 235. What is the machine shown in Plaintiff's Exhibit 235, and have you examined the same in the Whitman factory; if so, is that machine now the same as when it was leased to the Commonwealth Shoe Company by the Goodyear Company, and what have you to say as to the accuracy of Mr. Chapman's comparison of that machine with the cut on page 95 of Plaintiff's Exhibit No. 220?

*Ans.* I have examined the channeling machine No. 2072 which is in the Whitman factory of the Commonwealth Shoe & Leather Company, and have compared that machine with the photograph of Plaintiff's Exhibit No. 235, and find that that machine No. 2072 is accurately represented in the photograph. That photograph, Plaintiff's Exhibit 235, shows the Goodyear insole channeling machine as it was put out shortly before February, 1899, by the Goodyear Shoe Machinery Company and after that date by the United Shoe Machinery Company. That photograph, however, does not accurately represent machine No. 2072 as it was leased to the Commonwealth Shoe & Leather Company by the Goodyear Shoe Machinery Company on February 8, 1893.

When the machine was leased on that date it was constructed as shown in the cut on page 95 of Plaintiff's Exhibit No. 220, which is the Goodyear Shoe Machinery Company catalogue of January 1, 1897. The machine as it now stands is substantially different from the machine shown in that cut, and the present organization of the machine is accurately shown in patent No. 550,402 November 26, 1895, Beckman, and as set forth in claims 4, 5 and 6 of that patent.

At the time machine No. 2072 was leased to the Commonwealth Shoe & Leather Company the mechanism shown in Beckman patent No. 550,402, of November 26, 1895, had not been produced. I shall later explain the advantages of the construction defined in the claims of this Beckman patent and at the same time explain the defects of the machine constructed as it was when leased to the Commonwealth Shoe & Leather Company, which defects were overcome by the improvements of the Beckman patent.

I will state now, however, that the machine of the cut on page 95 of Complainant's Exhibit No. 220, Goodyear Catalogue of 1897,

was obsolete before the formation of the United Shoe Machinery Company in 1899, and the United Company have never put out a machine as shown in that cut.

When I examined machine No. 2072 at the Whitman factory the machine was idle. In my examination I found that, as Mr. Chapman has stated, the machine was equipped for special work; that is, channeling felt insole. That is certainly a very specialized kind of work. The machine is not used in the Commonwealth Shoe & Leather Company factory for channeling leather insoles, and I observed two of the United Company's present commercial channeling insole machines known as "Channeling Machine, Goodyear Universal", which were being operated near the machine of Plaintiff's Exhibit No. 235, and those machines were being operated to full capacity in the channeling of regular welt insoles. All of the all-leather welt insoles which are used in that factory are channeled on these two new machines. None of that work, as I have stated, is done on the machine of Plaintiff's Exhibit 235.

As to the accuracy of Mr. Chapman's comparison of the machine of Plaintiff's Exhibit No. 235 with the cut on page 95 of Plaintiff's Exhibit 220, Goodyear catalogue of 1897, I am obliged to state that his comparison seems to me rather superficial and inaccurate, as might be expected from the comparison of a machine with a catalogue cut, inasmuch as Mr. Chapman failed to note the important improvements defined in claims 4 and 5 of the Beckman patent No. 550,402, November 26, 1895.

**Mr. WEBSTER.** Please note petitioner's objection to the answer because of the same being largely in the nature of argument, and the argumentative portion is objected to and notice given that petitioner will move to strike out the same hereafter.

*Int. 36.* It is not clear to me whether or not the mechanism of the Beckman patent to which you refer was embodied in the insole channeler as constructed in 1899. I will, therefore, ask you what patent, if any, of the United Company showed and described mechanism embodied in that machine as the same was constructed in 1899?

**CHANNELING MACHINE : GOODYEAR (INSOLE AND OUTSOLE).**

*Ans.* I should have stated in my preceding answer that the insole channeling machine put out by the Goodyear Shoe Machinery Company just prior to February, 1899, and by the United Company after that time, was constructed specifically as shown in the drawings and set forth in the claims of patent No. 550,402, November 26, 1895, Beckman. When the machine was used for channeling welt insoles it embodied the mechanism set forth in claims 4, 5 and 6 of this patent. When the machine was used for channeling turn soles, it embodied the mechanisms set forth in all six of the claims of the patent.

In explaining the advantages of the improvements shown in the drawings and set forth in the claims of the Beckman patent No. 550,402, it is necessary, first, to refer to the defects in the prior machine; that is, the machine as it was put out before the improvements of the Beckman patent were made and incorporated in the machine. That prior machine, which is the machine shown on page 95 of Plaintiff's Exhibit No. 220, Goodyear Company catalogue of 1897, did not do its work properly in going around the toe of an insole. This difficulty was greatly increased with the introduction about 1895 of narrow-toed lasts. The radical changes which have marked the development of modern lasts began about that time, and the first step in that development was the use of narrow-toed lasts which required insoles such as that shown in Fig. 10 on sheet 4 of the drawings of the Beckman patent No. 550,402. It was very difficult, and in fact impracticable, in the commercial manufacture of shoes to channel insoles, such as represented in Fig. 10 of the drawings of the Beckman patent, upon the old machine; that is, the machine shown on page 95 of Plaintiff's Exhibit 220, Goodyear Company's catalogue of 1897. These defects were overcome in the machine of 1899, embodying the mechanisms set forth in claims 4, 5 and 6 of Beckman patent No. 550,402. Of this group of claims a typical claim is 4:—

“4. In a sole channeling machine, the combination with a shoulder knife, of a channeling knife and laterally adjustable

presser-foot, and means for changing the relative lateral position of the shoulder knife and channeling knife, substantially as described."

The improvement defined in the above claim made it possible to channel successfully all shapes of toes as required for shoes made on the modern lasts, the development of which, as I have stated, dates from about 1895.

When the machine shown on page 95 of Plaintiff's Exhibit 220, Goodyear Company catalogue of 1897, was used in channeling turn soles, its operation was unsatisfactory because the edge of the sole frequently varied in thickness after the operation of the machine. It is highly important that the "feather edge" of a turn sole, such as shown in Defendants' Exhibit 118, be uniform in thickness all around the shank and forepart, as that edge is visible and prominent in the finished shoe. The old machine was not properly organized to insure the desired uniformity in the feather edge of a turn sole. The organization set forth in claims 1, 2 and 3 of Beckman patent No. 550,402, of November 26, 1895, which was, as I have stated, embodied in the commercial insole channeling machine of 1899 when that machine was used for channeling turn soles, enabled that machine to produce a feather edge on the turn sole which was always of uniform thickness.

Summarizing my discussion of the commercial insole channeling machine of 1899 and its relation to the machine which preceded it, I can state without hesitation that the old machine shown in the cut on page 95 of Plaintiff's Exhibit 220 could not have performed satisfactorily the work which has been required for insole channelers and turn sole channelers during the past fifteen years.

*Int.* 37. What has been the development in the matter of insole channelers put out by the United Company since 1899? If any new machines, or modifications of old ones, have been introduced, state what they were, and if embodying the subjects-matter of any Letters Patent of the United Company, name the patents.

**CHANNELING MACHINE: GOODYEAR UNIVERSAL (WELT WORK).**

*Ans.* The commercial insole and turn sole channeling machine of 1899, the machine shown in Plaintiff's Exhibit 235, was superseded in 1907 by a machine officially known as "Channeling Machine, Goodyear Universal", which is at present, and has been since that date, the standard commercial insole channeling machine of the United Company. The machine was first put into commercial use on welt work in September, 1907, and was first put into use on turn work in November, 1908.

This new machine, the present standard commercial channeling machine for welt insoles and turn soles, was produced after a long period of experimenting which began soon after the formation of the United Company, in the endeavor to provide a machine which would have much greater capacity than the 1899 machine, and which would at the same time do better work, and particularly would avoid occasional mutilation of the work which sometimes occurred in the operation of the 1899 machine.

The 1899 machine was limited in its capacity because it was hand operated. It was sometimes provided with what was known as a "power attachment", as is shown in Plaintiff's Exhibit 235, but this power attachment did not make the machine a power-operated machine, since it involved continuous manual operation by the workman of the crank which is shown at the right in that photograph, Plaintiff's Exhibit 235. The problem of operating an insole channeling machine by power proved a serious one for the United Company's inventors, because, while it is permissible and desirable to operate the machine at high speed along the straighter portions of the work, it is usually preferred and required for some classes of work that the operation be performed more slowly around sharply curved portions of the sole, as at the toe.

The problem of operating an insole channeling machine by power was solved in the machine which was produced in 1907, and which, as I have said, is the present standard commercial machine put out by the United Company, by the mechanism shown in the drawings, described in the specification and set forth in the claims of patent

No. 1,023,801, April 23, 1912, Bertrand (application filed April 30, 1908), which shows and describes the machine substantially as it is constructed and put out for channeling welt insoles. The solution of that problem of operating the machine by power, and at the same time permitting of slower operation around the toe is set forth in many of the claims of this patent No. 1,023,801, of which a typical claim is the second.

Mr. WEBSTER. Please note at this point objection of counsel for petitioner to introduction of patents or reference to patents issued after the date of filing of the petition herein, as having no reference to the questions involved in this cause.

[*Answer to Int. 37 continued:*] •

Claim 2 of this patent No. 1,023,801, the application for which was filed, as I have stated, on April 30, 1908, is as follows:—

"2. A power channeling machine, having, in combination, a work table for supporting a flat sole and over which the sole is fed, a lip forming cutter supported opposite said table, a reciprocating head, a work feeding foot sustained thereby for engaging the sole adjacent the point of operation of said cutter means for reciprocating said head to feed the sole step by step constructed and arranged to provide a relatively high speed of work feed, and provision for slowing down the speed of work feed a substantial amount during the operation of the machine and while cutting around the toe to facilitate the guiding of the sole by the operator relatively to the cutter."

The specific construction of the work-feeding mechanism of this new channeling machine, the present commercial machine, comprised means which clamped the stock on opposite sides and fed it forward between successive cutting operations of the channeling knives. The problem of reducing the speed of the machine's operations around the toe was ingeniously solved by mechanism under control of the operator and arranged for convenient operation by him, which shortened the feeding stroke of the work-engaging clamps. This mechanism permits wide variations in the length of the feed from the maximum down to nothing. It may be interesting to note that, during the time that I observed the operation of the two Universal channeling machines in the Whitman factory of the Commonwealth Shoe & Leather Company, a large number of

insoles were channeled by the operators of the two machines, and in cutting around the toe, in every insole operated upon by the machines while I was observing them, the operator of each machine manipulated the feed-controlling mechanism to reduce substantially the speed of the work-feed around the toe.

This improved work-feeding mechanism of the new insole channelling machines of 1907 had a further distinct advantage over the feeding mechanism of the 1899 machine in that there was no liability of mutilating the stock during the operation of the machine. As will be noted on inspection of the drawings of Beckman patent No. 550,402, November 26, 1905, and inspection of Plaintiff's Exhibit 235, both of which show the commercial insole channeling machine of 1899, the work was fed into that machine by a toothed wheel which operated between the two channeling knives. This feed wheel operated by digging its teeth into the stock, and as the portion of the stock engaged by it was the "between substance" which was subsequently to receive the stitch in the operation of attaching the welt of a shoe, or attaching the upper of a turn shoe, and as it constituted the only means which secures the upper to the insole of a welt shoe, or to the sole of a turn shoe, it is obvious that such mutilation of this "between substance" as would impair its thread-holding power would be very objectionable as its thread holding would be weakened, with the result that the seam might give way in the wear of the shoe. The operation of this feed wheel caused the greatest difficulty in channeling around the toe. In operating at the toe the shoe must be turned to permit the knives to travel in curved paths around the toe and this turning must take place while the teeth of the feed wheel are engaged with and sunk into the "between substance". The liability of mutilating the "between substance" under these conditions is obvious. All this trouble was entirely obviated in the new Universal machine introduced in 1907.

This improved feeding mechanism was combined in the Universal machine of 1907 with vibrating knives which cut the two channels by a backward movement after the sole had been fed. In the old machine of 1899 stationary knives were employed and the toothed

feed wheel had to feed the sole forward against the two knives. The danger of the mutilation of the stock to which I have referred was, of course, greatly increased by this organization of the 1899 machine.

Combined with this organization of clamp-feeding mechanism and vibrating knives was a work retainer arranged to clamp the work during the backward cutting stroke of the knives. Many of the claims of patent No. 1,023,801, April 23, 1912, Bertrand, granted on application filed April 30, 1908, were directed to this point. Of these claims, the tenth is typical:—

"10. In a stock fitting machine for channeling soles, the combination with a feather edge forming knife and a channel forming knife, of means to reciprocate said knives and the work together in one direction to feed the work, and means to thereafter clamp the work against movement while said knives move backwardly to form the feather edge and channel."

I have endeavored to point out only some of the most striking improvement since incorporated in this Goodyear Universal channeling machine as the machine was organized for welt work. The improvements which I have mentioned, together with others, are defined in the claims of the following patents, all owned by the United Shoe Machinery Company:—

- No. 644,571, March 6, 1900, Beckman.
- No. 952,701, March 22, 1910, Eppler.
- No. 984,772, February 21, 1911, Meyer.
- No. 984,773, February 21, 1911, Meyer.
- No. 989,142, April 11, 1911, Gordon.
- No. 1,023,801, April 23, 1912, Bertrand (application filed April 30, 1908).
- No. 1,030,703, June 25, 1912, Bertrand (application filed March 24, 1909).
- No. 1,030,706, June 25, 1912, Bertrand (application filed April 15, 1911).
- No. 1,030,708, June 25, 1912, Bertrand (application filed June 24, 1911).
- No. 1,030,802, June 25, 1912, Bertrand (application filed May 16, 1910).

**CHANNELING MACHINE : GOODYEAR UNIVERSAL (TURN WORK).**

When a channeling machine is used for turn work a somewhat different organization is required from that which equips the machine for welt work. However, the Goodyear Universal channeling machine for turn work is, in general, substantially organized like the machine when equipped for welt work, and the machine equipped for turn work embodies the mechanisms set forth in the list of patents which I have just named excepting patent No. 989,-142, April 11, 1911, Gordon, and excepting also the last three on the list.

Substituted for the mechanisms set forth in the claims of those four patents are mechanisms which adapt the organization of the machine for the channeling of turn soles and which are set forth in the claims of the following patents, all of which are owned by the United Company : —

Reissue No. 13,375, February 27, 1912, Prenzel (original patent No. 965,656, July 26, 1910).

Patent No. 1,030,536, June 25, 1912, Prenzel (application filed April 20, 1911).

No. 1,030,704, June 25, 1912, Bertrand (application filed May 10, 1909).

No. 1,030,710, June 25, 1912, Bertrand (application filed July 24, 1911).

While all of the improvements set forth in the list of patents which I have just enumerated are important and contributed to the success of the Goodyear Universal channeling machine on turn work, attention should perhaps be called particularly to the improvement defined in patent No. 1,030,704, June 25, 1912, Bertrand (application filed May 10, 1909).

In machines for channeling welt insoles or turn soles means for engaging the edge of the sole and properly locating it for the operation of the channeling knives has been found indispensable. It is important that this means should be operative at a point on the sole adjacent to the position where the knives are performing their cutting operation. In the Universal machine, therefore, in which

the knives vibrate, the means for engaging the edge of the sole, which may conveniently be called an edge gauge, is mounted to vibrate with the knives so that it is always adjacent to their cutting edges. In the experimental work directed to adapting this Universal channeling machine for turn work it was found that it was not practicable to move the edge gauge in a line parallel with the path of travel of the knives, because in operating upon the curved portions of a turn sole there was danger that the edge gauge would crowd the feather edge of the sole and mutilate it. As I have explained, it is important that the edge of a turn sole be in perfect condition after the channeling operation, because this edge is visible in the finished shoe. It was to obviate this danger of injuring the sole by the edge gauge that the improvement of patent 1,030,-704 was incorporated in the machine. This improved organization comprised means for moving the edge gauge slightly away from the knives in the backward movement of the knives and edge gauge, thus permitting clearance between the edge gauge and edge of the sole in operating upon curved portions of the sole. The problem and its solution are indicated in Fig. 6 of the drawings of the Bertrand patent No. 1,030,704. All of the twenty-two claims of the patent are directed to mechanisms embodied in the commercial machine for turn work and are, most of them, directed to the organization which I have been discussing. A typical claim is 8:

"8. A channeling machine, having, in combination, a support for a flat sole, work feeding devices for engaging the face of the sole, an edge gauge, an automatic means for imparting a relative separating movement to said gauge and devices across the line of feed to relieve the pressure of the sole on the gauge, substantially as described."

The Universal channeling machine which, as I have stated, was introduced in 1907 for welt work and in 1908 for turn work has superseded the machine of 1899, the machine shown in Plaintiff's Exhibit 235, for both welt insole and turn channeling. Of the new machines 1094 were put out in the four years between March 1, 1909, and March 1, 1913, the latter date being the end of the United Company's last fiscal year. The Universal machine has a capacity for both welt insole work and turn sole work of from 10

to 25 per cent more than the 1899 machine. One of the new machines will channel enough soles to provide for the operation of three or four welt and turn sewing machines.

*Int.* 38. Have you collected in a volume the patents referred to by you in your testimony as relating to insole channeling machines?

*Ans.* I have and I now produce this volume [*producing volume*].  
[ *Volume of patents introduced in evidence, and marked "Defendants' Exhibit 119".* ]

Mr. WEBSTER. Please note the petitioner's objection to introduction of any patents issued after the date of the filing of petition herein, on the ground that the same has no bearing with reference to any matters involved in this cause, and such patents are irrelevant, inadmissible and incompetent.

*Int.* 39. Will you please state the number, date, name of patentee of each of the patents contained in that volume, Defendants' Exhibit 119?

*Ans.* [ *Reading.* ]

No. 644,571, March 7, 1900, Beckman.

No. 952,701, March 22, 1910, Eppler.

No. 965,656, July 26, 1910, Prenzel.

Reissue No. 13,375, reissued February 27, 1912, Prenzel.

No. 984,772, February 21, 1911, Meyer.

No. 984,773, February 21, 1911, Meyer.

No. 989,142, April 11, 1911, Gordon.

No. 1,023,801, April 23, 1912, Bertrand (application filed April 30, 1908).

No. 1,030,536, June 25, 1912, Prenzel (application filed April 20, 1911).

No. 1,030,703, June 25, 1912, Bertrand (application filed March 24, 1909).

No. 1,030,704, June 25, 1912, Bertrand (application filed May 10, 1909).

No. 1,030,706, June 25, 1912, Bertrand (application filed April 15, 1911).

No. 1,030,708, June 25, 1912, Bertrand (application filed June 24, 1911).

No. 1,030,710, June 25, 1912, Bertrand (application filed July 24, 1911).

No. 1,030,802, June 25, 1912, Bertrand (application filed May 16, 1910).

The Universal channeling machine is put out by the United Company through its Goodyear department.

#### GOODYEAR OUTSOLE CHANNELING MACHINE.

*Int.* 40. In his answers to questions 65 and 66, Mr. Chapman refers to an out-sole channeler which he saw at the Whitman factory and compares it with what is illustrated on page 108 of Plaintiff's Exhibit 220. For what work in shoe manufacturing was the out-sole channeler at the Whitman factory, and that shown on page 108 of the catalogue, intended? What was its importance as a machine, and to what extent has it been employed to do the work for which it was designed?

*Ans.* The Goodyear out-sole channeler is a very old machine which, when it was active, was used for channeling the out-soles of welt shoes. Before there was introduced into the industry the rounding and channeling machine, it was the practice to shape out-soles of welt shoes in one or two ways. The workmen would either tack on the shoe the out-sole, trim it by hand to the desired contour, then remove it from the shoe and channel it upon the Goodyear out-sole channeler, or he would die out the out-sole with a die and channel it upon the Goodyear out-sole channeler before applying it at all to the shoe. When the rounding and channeling machine went into use these old methods of channeling out-soles became obsolete and the Goodyear out-sole channeler became obsolete as a machine for use in the manufacture of welt shoes at the same time.

As to the reasons why the old methods of channeling out-soles have been superseded by the rounding and channeling machine, it is difficult to locate properly upon the bottom of a welt shoe a sole which has previously been shaped to the contour desired for the sole of the finished shoe. The sole of a welt shoe has to be applied to the bottom of a shoe, after, of course, the welt has been attached

and when the welt is extended laterally from the shoe all around the shoe in front of its heel end.

The outline of the shoe bottom defined by the edge of the laterally extending welt is larger than a sole that has been given the desired shape for the sole in the finished shoe, and it is difficult to locate properly the sole under these conditions. So far as I know, no customer of the United Company attempts to shape the out-soles of welt shoes before they are attached to the shoe. The rounding and channeling machine, as I have explained in my previous testimony, shapes the sole after it has been cemented to the shoe and imparts the shape in accordance with the shape of the last. At the same time it is very economical to use the rounding and channeling machine because it performs simultaneously two operations which, before its introduction, had to be performed separately; that is, the shaping of the sole and the forming of the channel which is to receive the out-seam.

For the reasons which I have stated there is, under modern conditions of shoe making, no place in a welt shoe factory for the Goodyear out-sole channeling machine, as a machine for use on welt shoes. This machine became inactive before the United Company was formed, and such small demand for the machine as there has been since the company was formed has been for special work.

*Int.* 41. Have you examined the machine at the Whitman factory; and, if so, for what purpose is it now used?

*Ans.* I have examined at the Whitman factory the machine which has been referred to by Mr. Chapman. As he stated, the machine is constructed substantially as shown in the cut on page 108 of Plaintiff's Exhibit 220, which is the Goodyear Shoe Machinery Company catalogue of 1897. When I saw this machine at the Whitman factory it was idle. The machine was equipped for special work, that is, for forming grooves in the bottom of the channels of out-soles for McKay sewed or standard screw shoes.

That machine is never used in the Whitman factory upon welt work of any kind. The out-soles of all welt shoes made in the Whitman factory are channeled on the Universal rounding and channeling machine at the same time that the sole is shaped.

There are ten Universal rounding and channeling machines in that factory, of which one is the new model E which I have discussed in my previous testimony.

*Int.* 42. How many Goodyear out-sole channeling machines like that shown on page 108 of Plaintiff's Exhibit 220 have ever been put into shoe factories by the United Company?

*Ans.* Seven.

#### LEVELING MACHINE: GOODYEAR AUTOMATIC SOLE.

*Int.* 43. Please explain the function of a leveling machine in the manufacture of shoes, and state the class of work for which the Goodyear automatic sole-leveling machine is used.

*Ans.* A leveling machine is used to give to the bottom of the sole of a shoe the shape desired in the finished shoe. The operation is performed after the sole has been attached and the desired shape is imparted to the sole by pressure. In the manufacture of welt shoes it is the practice to impart this pressure by means of a vibrating roll which is moved relatively to the shoe in such manner that it operates successively upon different portions of the sole. The Goodyear automatic sole-leveling machine is a machine of the vibrating roll type which is used exclusively for leveling the soles of welt shoes.

*Int.* 44. What was the first patent definitely directed to an automatic sole-leveling machine of the vibrating roll type?

*Ans.* An automatic sole-leveling machine of this type was for the first time shown in the drawings and described in the claims of patent No. 540,222, May 28, 1895, Winkley and Phillips.

The nature of the advance in the art represented by this patent may be indicated by quoting the first claim of the patent, which is as follows:—

“ 1. In a sole leveling machine, the combination of a vibrating leveling roll, a shoe supporting jack, and connected mechanism operating automatically to change the relative longitudinal position and lateral inclination of the roll and jack, substantially as described.”

The machine shown in this patent was thoroughly automatic. The operator could, if he desired, after putting a shoe into posi-

tion for the operation of the machine and starting the machine, go away and leave it and when he came back he would find that the leveling operation had been completed by the machine, that the machine had stopped and that the shoe had been presented by the machine in proper position for its convenient removal and the substitution of another machine.

*Int.* 45. In his answers to questions 67 and 68 Mr. Chapman compared the machine of Plaintiff's Exhibit 234 with the cut on page 28 of Plaintiff's Exhibit No. 190, being the United Shoe Machinery Company's catalogue of 1902. What machine is shown on page 28, and when was that machine first put into use?

*Ans.* The cut on page 28 of Plaintiff's Exhibit 190, being the United Shoe Machinery Company's catalogue of 1902, shows the Goodyear automatic leveling machine as it was first put out for commercial use about 1896, and also correctly represents the machine as it was put out for commercial use in 1899. The machine shown in Plaintiff's Exhibit No. 234, which is No. 35, was leased to the Commonwealth Shoe and Leather Company by the Goodyear Shoe Machinery Company on May 26, 1897. I have examined the Goodyear automatic leveling machine No. 35, of which Plaintiff's Exhibit 234 is a photograph, and I find that that machine is not now in the condition in which it was leased by the Goodyear Company in 1897. The work-supporting mechanism which is shown in that photograph was of a type which was not adopted for commercial use until 1900, and that mechanism was substituted in the machine of Plaintiff's Exhibit 234 for the type of work-supporting mechanism which was commercially used prior to 1900, and which is that shown in the cut on page 28 of Plaintiff's Exhibit 190. The work-supporting mechanism now on the machine shown in Plaintiff's Exhibit 234 is illustrated in drawings and described in the specification set forth in the claims of patent No. 677,550, July 2, 1901, Meyer. Mr. Chapman apparently failed to note this difference between the work-supporting mechanism which is plainly shown in Exhibit No. 234 and the work-supporting mechanism which is also plainly shown in the cut on page 28 of Plaintiff's Exhibit 190.

*Int.* 46. If the subjects-matter of any patent of the United Company were embodied in the Goodyear automatic leveling machine as put out by the United Company in 1899, please name those patents and state briefly their relation to that machine.

*Ans.* The commercial Goodyear automatic leveling machine as put out in 1899 embodied mechanisms sets forth in the claims of the following patents, all owned or controlled by the United Shoe Machinery Company : —

- No. 540,222, May 28, 1895, Winkley and Phillips.
- No. 540,223, May 28, 1895, Winkley and Phillips.
- No. 541,988, July 2, 1895, Winkley.
- No. 546,211, September 10, 1895, Winkley and Phillips.
- No. 555,548, March 3, 1896, Winkley.
- No. 580,746, April 13, 1897, Winkley.
- No. 610,314, September 6, 1898, Winkley.

Of these patents the first one, No. 540,222, was, as I have already stated, the first patent directed to an automatic leveling machine of the vibrating-roll type. I have already quoted a typical claim of that patent. The machine shown in the drawings of this patent, however, was not commercially used, but was an experimental machine which constituted one of the steps toward the development of the commercial machine which was constructed as shown and described in patent No. 555,548, March 3, 1896, Winkley. The commercial machine of 1899 embodied the mechanism set forth in all twelve of the claims of that patent No. 555,548, of which a typical claim is the eighth : —

"8. In a sole leveling machine, the combination of a pair of shoe supporting jacks, a leveling roll associated with each jack, means for relatively actuating one jack and its associated roll to level a right shoe, and the other jack and its associated roll to level a left shoe, and connected mechanism operating automatically to regulate the relative movement of each jack and its associated roll to shape the forepart and shank of a shoe independent of each other, substantially as described."

While this machine did not reach the stage of its development at which it was commercially successful until there were incorporated in it the improvements of the patent No. 555,548, to which I

have just referred, important steps in its development are represented in earlier patents and valuable improvements are set forth in the claims of those patents. For example, the commercial machine of 1899 embodied the mechanism set forth in all of the nineteen claims of patent No. 540,223, May 28, 1895, Winkley and Phillips. A typical claim of this patent is the first :—

"1. In a sole leveling machine, the combination of two shoe supporting jacks, a vibrating leveling roll, associated with each jack, and means common to both jacks for automatically presenting each jack independently to its associated roll when the jack is brought into operative position, substantially as described."

Further substantial advance toward the commercial machine of 1899 is represented by patent No. 541,988, July 2, 1895, Winkley, all five claims of which set forth mechanism embodied in the commercial machine. A typical claim is the first :—

"1. In a sole leveling machine the combination of a vibrating leveling roll, a shoe supporting jack, connected mechanism for relatively actuating roll and jack to level the sole of a shoe placed upon the jack, and an automatically operating adjusting device connected with said actuating mechanism whereby the same is operated to shape the shank and forepart of a sole independently of each other, substantially as described."

*Int. 47.* Please state whether or not since February, 1899, any improvements have been embodied in the Goodyear automatic leveling machine put out by the United Company. If so, state what they were, the reasons why they were introduced, and explain their importance in the industry.

*Ans.* Since February, 1899, many important improvements have been embodied in the Goodyear automatic sole-leveling machine as put out by the United Company. The first improvement was the work-supporting mechanism shown in patent No. 677,550, July 2, 1901, Meyer, and defined in the claims of that patent. This improvement was adopted in 1900, and, as I have already explained, the machine of Plaintiff's Exhibit No. 234 at the Whitman factory of the Commonwealth Shoe & Leather Company is now provided with the work-supporting mechanism of this patent No. 677,550, which was substituted on the machine of Plaintiff's Exhibit No.

234 for the mechanism used prior to this improvement in 1905. This improved work-supporting mechanism was more convenient for the operator and more positive in use and was also more accurate in its adjustments and permitted a wider range of adjustments of the shoe relative to the leveling roll.

In 1901 the machine was reorganized by incorporating in it the improvements shown in the drawings and described in the claims of patent No. 692,401, February 4, 1902, Winkley, and 668,635, February 26, 1901, Gifford. The 1899 machine was not organized to level properly the soles of shoes provided with Baltimore edges, because it was so organized that the leveling roll tipped at the same inclination on both sides of the forepart. This was not satisfactory in the leveling of Baltimore edges, because manufacturers did not desire to apply pressure at the same inclination to the outer extension edge as they did to the edge on the inner side of the shoe. Many manufacturers refused to use the automatic leveling machine until it was provided with the inventions of these patents No. 692,401 and 668,635.

The nature of the improvements which adapted the reorganized machine of 1901 for leveling shoes with extension edge soles is well indicated by typical claims of the patents. Claim 1 of patent No. 668,635, February 26, 1901, Gifford, is as follows:—

“ 1. A sole leveling machine, having, in combination, a leveling roll, a shoe supporting jack, connected mechanism for relatively actuating the roll and jack to level the sole of a shoe placed upon the jack, and two automatically operating adjusting devices connected with said actuating mechanism whereby the same is operated to shape the shank and the opposite edges of the forepart of a sole independently of each other, substantially as described.”

Claim 1 of patent No. 692,401, February 4, 1902, Winkley, is as follows:—

“ 1. A sole leveling machine, having, in combination, a leveling roll, a shoe supporting jack, mechanism for relatively actuating the roll and jack to level the sole of a shoe placed upon the jack, an adjusting device connected with said mechanism, two independent mechanisms for automatically actuating said device and means for connecting said device to either of said mechanisms, substantially as described.”

While the automatic leveling machine as reorganized in 1901 would level the great majority of shoes with entire satisfaction to manufacturers, it still lacked the flexibility of adjustment which was required to adapt it for all kinds of work and to meet all conditions which had to be dealt with in the leveling of welt shoes. For example, it lacked capacity for adjustment to vary the operation of the leveling roll at any point where the manufacturer might wish to vary its operation in accordance with the style of the shoe or the particular shape which he desired for the sole. It also lacked any provision for adjustment to enable it to level shoes which had shanks longer or shorter in proportion to the forepart than the shanks of the average shoe. Consistently with the development of this machine which has been steadily toward making it a universal machine which would be adapted to level satisfactorily all welt shoes of whatever kind or style, experimental work was carried on with the object of providing the machine with universal adjustments and adapting it for every possible kind of work which might come to it, and as a result of the experimental work there was produced, in December, 1910, a machine which was known as "Leveling Machine, Goodyear Automatic Sole, Model B." This new machine was characterized by two important improvements; the first consisted in an organization which permitted adjustment to vary independently the plane which was imparted to the sole at different regions. This improvement is set forth in all of the eight claims of patent No. 889,287, June 2, 1908, Winkley, a typical claim of which is the first:—

"1. A sole leveling machine, having, in combination, a sole leveling roll, a shoe supporting jack, means to change the relative lateral inclination of the roll and jack, and means for independently adjusting the relative lateral inclination of the roll and jack for operation upon any one of a plurality of different portions of the shoe."

The second important improvement which was characteristic of this model B machine consisted in means by which the machine could be adapted for operation upon shoes having shanks longer or shorter in proportion to the forepart than the shanks of average

shoes. This improvement is set forth in all of the twenty-one claims of patent No. 1,011,301, December 12, 1911, Winkley. Typical claims are the first and ninth, which are as follows:—

"1. A sole leveling machine, having, in combination, a shoe supporting jack, a sole leveling roll, connected mechanism acting automatically to change the relative longitudinal position and lateral inclination of the roll and jack, and means for varying the operation of said mechanism to compensate for variations in the relative length of the forepart and shank of shoes of different styles."

"9. A sole leveling machine, having, in combination, a shoe supporting jack, a sole leveling roll, connected mechanism acting automatically to change the relative longitudinal position and lateral inclination of the roll and jack including two compensating mechanisms acting respectively to control the operation of said mechanism while the inside margin and the outside margin of the sole are being operated upon, and means for adjusting said compensating mechanisms to vary the points on the inside and outside margins of the sole at which a change is made in the relative lateral inclination of the roll and jack for operation on the forepart."

Improvements embodied in this new model B machine are also set forth in all of the three claims of patent No. 1,054,263, February 25, 1913, Winkley (application filed October 3, 1910).

This model B machine is now undergoing further reorganization to incorporate additional improvements which contribute to the convenience of the operator, and particularly in the way of facilitating the effecting of all of the adjustments easily and quickly. It is also anticipated that further improvements of a nature to improve the quality of the work will be embodied in the machine.

This machine, the leveling machine, Goodyear automatic sole, is put out by the United Shoe Machinery Company through its Good-year department.

Mr. WEBSTER. Please note petitioner's objection to all reference in the foregoing answer to patents dated after the date of the filing of the petition herein, as incompetent, inadmissible and irrelevant, and as having no reference to the questions at issue in this cause.

*Int.* 48. Have you collected in a volume the several Letters Patent to which you have referred to in your prior testimony as relating to automatic sole-leveling machines of the vibrating roll type?

*Ans.* Yes, sir, and I produce the volume.

[*Volume of patents so produced is introduced in evidence, and marked "Defendants' Exhibit 120".*]

Mr. WEBSTER. Please note objection of petitioner to introduction of patents issued after date of the filing of the petition herein.

Int. 49. Will you please give the number, date and the name of patentee of the several patents included in the volume which has just been offered in evidence as Defendants' Exhibit 120?

- Ans.* No. 540,222, May 28, 1895, Winkley and Phillips.  
No. 540,223, May 28, 1895, Winkley and Phillips.  
No. 541,988, July 2, 1895, Winkley.  
No. 546,211, September 10, 1895, Winkley and Phillips.  
No. 555,548, March 3, 1896, Winkley.  
No. 580,746, April 13, 1897, Winkley.  
No. 610,314, September 6, 1898, Winkley.  
No. 668,635, February 26, 1901, Gifford.  
No. 677,550, July 2, 1901, Meyer.  
No. 692,401, February 4, 1902, Winkley.  
No. 889,287, June 2, 1908, Winkley.  
No. 1,011,301, December 12, 1911, Winkley.  
No. 1,054,263, February 25, 1913, Winkley (application filed October 3, 1910).

#### STITCH-SEPARATING MACHINES.

Int. 50. What is the function of a stitch separator in the manufacture of shoes?

*Ans.* A stitch-separating machine is used to form indentations in the upper face of the welt of a welt shoe in the intervals between contiguous stitches. I produce a welt shoe which has been operated upon by the stitch-separating machine.

[*Shoe so produced is offered in evidence, and marked "Defendants' Exhibit No. 121".*]

Int. 51. What was the first patent directed to a stitch separator, and if the stitches were separated prior to that patent, how was it done?

*Ans.* The first patent disclosing a machine organized for separating the stitches of a finished out-seam was No. 521,978, June 26,

1894, Hadaway, which was reissued as reissue No. 11,538, May 12, 1896. The first commercial machine for performing this operation is shown in patent No. 543,012, July 23, 1895, Hadaway. Prior to the production of this machine stitches had been separated by a hand operation, the workman using a hand tool which was a form of chisel.

*Int. 52.* In his answers to questions 60 and 61 Mr. Chapman compared the cut shown on page 89 of Plaintiff's Exhibit 220 (catalogue of the Goodyear Company, issued January 1, 1897) with a stitch separator, No. 124, which he saw at Whitman. What does the cut on page 89 represent, and when was the machine of that cut first put into use?

#### SEPARATING MACHINE : HADAWAY STITCH.

*Ans.* The machine illustrated in the cut on page 89 of Plaintiff's Exhibit 220, Goodyear Shoe Machinery Company's catalogue of 1897, was the first commercial machine for separating stitches. That machine was first put out in September, 1895, and was the commercial stitch-separating machine of the United Shoe Machinery Company early in 1899.

*Int. 53.* If the subjects-matter of any Letters Patent of the United Company were embodied in that machine as the same was put out by the United Company in 1899, what were those patents, and state briefly their relation to said machine?

*Ans.* The machine as put out by the United Company in 1899 embodied mechanism set forth in the claims of —

Reissue patent No. 11,538, May 12, 1896, Hadaway ;

No. 537,823, April 23, 1895, Hadaway ;

No. 543,012, July 23, 1895, Hadaway.

Typical claims of reissue No. 11,538 are 2 and 14, which are as follows:—

" 2. In a machine for separating the stitches of boot or shoe soles, the combination of a work support; an automatically adjustable separator for locating the intervals between the stitches whether of uniform or varying lengths; and means having provision for forcing said tool between the stitches when the point of said tool has located itself in the space between two stitches."

"14. In a machine for separating stitches, the combination with a work support, of locating an indenting means and connected mechanisms operating automatically to actuate said means to locate and indent the intervals between the stitches after the sewing has been completed."

The problem which had to be solved in the production of a commercial machine for separating stitches, that is, for performing an operation previously performed by hand, and, on account of the expense of the operation, performed only on the highest grades of shoes and the most expensive shoes, was indicated by the claims which I have just quoted. The stitches of the out-seam vary in length and a machine for performing this operation must be able to automatically find the interval between each pair of successive stitches, whatever their length, and force the indenting tool to properly enter the interval between each pair of contiguous stitches.

The machine shown in the drawings of this reissue patent No. 11,538 was not a commercial machine. In the experimental machine shown in those drawings the stitch-finding movement of the separating tool was in the same direction as its feeding movement, in which the tool, after it had formed the indentation, was moved to feed the work along a distance approximately equal to the length of a stitch. This organization required that the stitch-separating tool at the beginning of its finding movement come down upon the top of a stitch and there was constant liability that the tool would deface or mutilate the thread in the stitches. An attempt to overcome this difficulty is represented by patent No. 537,823, April 23, 1895, Hadaway. In the organization of the machine shown in the drawings of this patent the stitch-finding movement of the tool was in the opposite direction to the direction of its work-feeding movement. A typical claim of this patent, which represents an important step in the development of a commercial machine, is the first :—

"1. In a machine for separating the stitches on boot and shoe soles the combination of a work support; an automatically adjustable separator for locating the intervals between the stitches whether of uniform or varying lengths; and means for moving said tool in

one direction to locate the interval between the stitches and means for moving said tool in the opposite direction to feed the work."

The first commercial machine adapted for satisfactory use in shoe factories under commercial conditions was constructed as shown in the drawing set forth in the claims of patent No. 543,012, July 23, 1895. In the organization of the machine shown in this patent the liability of injuring the stitch by bringing the separating tool down upon the top of a stitch at the beginning of its stitch-finding movement and then rubbing the tool across the top of that stitch was overcome by arranging the tool so that at the end of its work-feed movement it went back the length of a standard stitch and then was depressed for its stitch-finding movement. If the stitch was of average or standard length, which would usually be the case, the tool would immediately drop into the stitch interval. The tool was, however, arranged to have a stitch-finding movement in two directions after it descended, so that if the stitch happened not to be of standard length the tool would quickly locate it, but without the danger of mutilating the tops of stitches which was present in the construction shown in the earlier patents.

*Int. 54.* State whether or not since 1899 there have been any improvements or modifications introduced in, or in connection with, the stitch separator put out by the United Company. If so, what they were, the reason for them, and their importance in the art; if the same are shown and described in any Letters Patent of the United Company, name the patents.

*Ans.* The 1899 stitch-separating machine was not provided with means for adjusting the machine to enable it to operate properly upon shoes having the tread face of the sole and the upper face of the welt in planes at varying inclinations. The machine was first provided with means for adjusting it to provide for such variations between the planes of the welt and the tread face of the sole by the improvement shown in patent No. 690,422, January 7, 1902, Hadaway. A typical claim defining this improvement is 4:—

"4. A stitch separating machine, having, in combination, an indenting tool and actuating means therefor, a slide, a work support mounted thereon arranged to engage the bottom of a shoe

sole, and means for adjusting the work support on said slide to vary the angle of inclination of the sole engaging surface, substantially as described."

This improvement was adopted in 1901. Another defect in the machine of 1899 was that on the heavier classes of work the machine could not be depended upon to force the tool the desired distance into the stock between the two stitches. In January, 1902, improved means for operating the stitch-separating tool was adopted which overcame this objection. The first claim of patent 719,584, February 3, 1903, Hadaway, is :—

"1. A stitch separating machine, having, in combination, a tool supporting lever, a stud projecting from one side of the lever, a tool stock pivotally mounted thereon, an indenting tool on the tool stock and a pressure lever for actuating the tool supporting lever provided with an abutment arranged to support the stud against the backward thrust of the tool, substantially as described."

The improvement of this patent combined with mechanism which is described in patent No. 690,422, to which I have referred, effectively overcame the failure of the machine to operate properly on heavy work. The improvement of patent No. 690,422, which was a step in the development of such means, is defined in claim 9 of that patent :—

"9. A stitch separating machine, having, in combination, an indenting tool, a lever upon one side of which the tool is mounted, a projection on the other side of the lever, a rigid support arranged to be engaged by said projection when the lever is sprung by a resistance offered to the tool, and means for actuating the lever, substantially as described."

The machine, as put out in 1899, was further defective in that it made an indentation which was of the same depth from the outer edge of the welt to the end of the indentation adjacent to the upper. Making the indentation adjacent to the upper of the same depth as in the outer portion of the edge was objectionable, because it involved danger of injuring the inseam and tearing the welt away from the upper. This objection was overcome by an improvement adopted in 1902 and shown in patent No. 906,705, December 15, 1908, Hadaway (application filed June 6, 1904). The improve-

ment is defined in the first two claims of that patent, of which a typical claim is the first :—

“ 1. A stitch indenting tool, having a grooved working face, the surfaces of which are substantially plane and continuous throughout the working face of the tool and which are curved upwardly at their outer ends to prevent this portion of the working face from marring the work when the remaining portion is forced below the surface of the work, substantially as described.”

The improvement of this patent 906,705, like the improvement of patents Nos. 690,422 and 719,584, has been embodied in the commercial machine ever since its adoption.

In 1904, in the endeavor to extend the field of usefulness of the stitch-separating machine, an improvement was made in it which would adapt it to make imitation stitches in addition to its function as a stitch-separating machine. This improvement is shown in patent No. 933,174, September 7, 1909, Hadaway (application filed April 25, 1904). A typical claim of this patent is the first :—

“ 1. A machine for making imitation stitches, having in combination, a tool carrier, an automatically adjustable indenting tool mounted thereon, means including the tool carrier for actuating the tool to indent and feed the work, and means independent of the work acting automatically to move the tool on its carrier and thereby adjust the tool to regulate the extent of the feeding movements imparted to the tool, substantially as described.”

The structure set forth in the claim which I have just quoted is regularly embodied in the commercial stitch-separating machine. This machine, the official name of which is “ Separating Machine ; Hadaway Stitch ”, is put out by the United Shoe Machinery Company through its Goodyear department. The company had put out 1361 machines before March 1, 1913.

*Int. 55.* Referring again to the stitch separator, No. 124, which Mr. Chapman examined at the Whitman factory, have you examined that machine ?

*Ans.* I have.

*Int. 56.* State whether that machine is in the same condition as when it was leased by the Goodyear Company, and whether there are embodied in it the subjects-matter of any Letters Patent of the United Company issued after 1899.

*Ans.* Stitch-separating machine No. 124, which was referred to by Mr. Chapman and which I examined at the Whitman factory of the Commonwealth Shoe & Leather Company, is not now in the condition in which it was leased to the Commonwealth Shoe & Leather Company by the Goodyear Shoe Machinery Company. The machine has been reorganized and as now organized is constructed substantially as shown in part in the drawings of patent 719,584 and in part in the drawings of patent 933,174, both of which patents I have referred to above. The reorganized machine as it now stands in the Whitman factory embodies important inventions of the following patents:—

- No. 690,422, January 7, 1902, Hadaway.
- No. 719,584, February 3, 1903, Hadaway.
- No. 933,174, September 7, 1909, Hadaway.

The importance of the mechanisms set forth in the claims of these patents has been indicated in the foregoing detailed discussion of those patents.

*Int.* 57. Have you collected in a volume the Letters Patent referred to by you in your prior testimony as relating to stitch separators; if so, will you please produce it?

*Ans.* Yes; and I produce the volume.

[*Volume of patents so produced is introduced in evidence, and is marked "Defendants' Exhibit 122".*]

*Int.* 58. Will you please state the number, date and name of patentee of each of the patents included in the volume Defendants' Exhibit 122?

- Ans.* No. 521,978, June 26, 1894, Hadaway.  
Reissue No. 11,538, May 12, 1896, Hadaway.
- No. 537,823, April 23, 1895, Hadaway.
- No. 543,012, July 23, 1895, Hadaway.
- No. 690,422, January 7, 1902, Hadaway.
- No. 719,584, February 30, 1903, Hadaway.
- No. 906,705, December 15, 1908, Hadaway.
- No. 933,174, September 7, 1909, Hadaway.

## PEGGING MACHINES.

*Int.* 59. What is the function of a pegging machine in the manufacture of boots and shoes?

*Ans.* Prior to February, 1899, and most of the time since that date pegging machines were used exclusively for attaching the soles of boots or shoes by means of wooden pegs. In recent years some five or six machines have been put out by the United Shoe Machinery Company for use in performing an operation known as "nailing heel seats", that is, securing the heel ends of the soles to the insole and upper. Within the past year a few machines have also been used for driving wooden slugs into the toplifts of heels. These heel slugs are almost universally of metal, and probably the slugging of the toplifts of heels with wooden pegs is a temporary fad.

*Int.* 60. What was the first pegging machine commercially used in the manufacture of shoes and boots?

*Ans.* One of the earliest patents on pegging machines is No. 21,593, September 1, 1858, Sturtevant. I am not advised as to the extent to which the machine of this patent No. 21,593 was put into use, but a commercial machine which was known as the "New Era Pegging Machine", and was very extensively used, is shown in patents No. 34,335, February 4, 1862, Sargent, and No. 44,048, August 30, 1864, Sargent. A typical claim of patent No. 34,335 is the first:—

"1. As a new machine, the combination of the mechanism for operating the awl, peg driver, and for feeding the work, with a mechanism for cutting and feeding the peg wood, all being arranged compactly in the frame A or its equivalent and operated by the cams and levers, arranged substantially as and for the purposes described."

*Int.* 61. Mr. Chapman in his answer to question 70 has compared the Davey pegging machine which is at the Whitman factory of the Commonwealth Shoe & Leather Company with a cut on page 76 of Plaintiff's Exhibit 190 (being United Company's catalogue of 1902); have you examined the pegging machine referred to by Mr. Chapman; and, if so, what have you to say as to the accuracy

of Mr. Chapman's comparison? In answering this question please state whether or not the pegging machine at the Whitman factory is in the same condition that it was in when it was purchased from John F. Davey in 1895.

*Ans.* I am forced to the conclusion that Mr. Chapman's comparison of the pegging machine in the Whitman factory with the cut on page 76 of Plaintiff's Exhibit 190, being the United Company's catalogue of 1902, was very hurried, and it is evident that Mr. Chapman had not had an opportunity to examine a modern pegging machine. As to his statement that "in point of general mode of operation and functional results the two machines are substantially the same", practically the only similarity between the two machines is that they both can be operated to drive a wooden peg. The pegging machine in the Whitman factory of the Commonwealth Shoe & Leather Company is an obsolete machine. No machine of that type has ever been supplied to a shoe manufacturer by the United Shoe Machinery Company, and that pegging machine in the Whitman factory is the only machine of that type which is in use in any shoe factory in the world, so far as I can ascertain. The machine as now used in the Whitman factory is not in the condition in which it was sold to the Commonwealth Shoe & Leather Company in 1895. When it was sold it was equipped with inventions shown and defined in the claims of patent 555,434, February 25, 1896, Davey. That patent was the first patent on what has since been known as a "horn pegging machine" and represented the intermediate step between the earlier type of pegging machine and the modern pegging machine illustrated in the cut on page 76 of Plaintiff's Exhibit 190, United Company's catalogue of 1902.

Prior to the machine illustrated in Davey patent 555,434 it had been the universal practice in pegging shoes to insert the pegs while the last was still in the shoe. The pegs were all of uniform length and all longer than the average thickness of the material to be united, so that the ends of the pegs were driven into the wooden last. Then the last had to be pulled out of the shoe and the ends of the pegs had to be cut or broken off by a tool such as I now produce, which is known as a "peg rasp".

[*Peg rasp so produced is introduced in evidence, and marked "Defendants' Exhibit No. 123".*]

[*Answer to Int. 61 continued:*]

In the use of the pegging machine which is illustrated in patent No. 555,434, February 25, 1896, Davey, it was possible to peg shoes on the horn. This machine represented a great advance in the art over the prior machines, the operation of which I have just described, since it saved considerable of the operator's time and also a great expense in lasts, which were very soon worn out by the constant driving into them of the ends of the pegs. It was still necessary, however, in the use of the pegging machine of patent No. 555,434 to break off the ends of the pegs inside the shoe by means of a tool such as is illustrated in Defendants' Exhibit 123. I produce a horn tip such as was used on the machine of patent No. 555,434 and such as was on the pegging machine in the Whitman factory of the Commonwealth Shoe & Leather Company when that machine was purchased from John F. Davey in 1895.

[*Horn tip of Davey pegging machine of 1895 so produced is introduced in evidence, and marked "Defendants' Exhibit No. 124".*]

#### PEGGING MACHINE : DAVEY.

[*Answer to Int. 61 continued:*]

This horn tip was the improvement in pegging machines which first made it possible to peg shoes on a horn instead of on a wooden last. The machine of this patent No. 555,434, February 25, 1896, represented, however, only a brief transitory period in the development of pegging machines. Before February, 1899, that machine had been superseded by an entirely new and different type of machine and the standard commercial pegging machine which was being supplied to shoe manufacturers in 1899 was organized to cut off the end of each peg inside the shoe at the instant the driving of the peg had been completed. That machine incorporated also some inventions made after February, 1899, and is the machine which is shown on page 76 of the Plaintiff's Exhibit 190, United Company's catalogue of 1902. In fact, the general operation of that machine which constitutes its fundamental distinction over all

prior machines is indicated in the descriptive matter on page 77 of Plaintiff's Exhibit 190, United Company's catalogue of 1902, which page 77 is directly opposite page 76, on which is shown the cut with which Mr. Chapman compared the machine at the Whitman factory. I quote from this descriptive matter the following statement:—

"There are cutting devices mounted in the tip of the horn and operated automatically by mechanism which cleanly cut off the projecting ends of the peg on the inside of the shoe as fast as the pegs are driven in."

I produce a horn tip such as was used in the commercial Davey pegging machine in 1902 at the date of the catalogue Plaintiff's Exhibit 190.

[*Horn tip of present commercial Davey pegging machine is introduced in evidence, and marked "Defendants' Exhibit 125".*]

[*Answer to Int. 61 continued:*]

In this exhibit the cutters in the tip of the horn which are operated immediately after each peg is driven to sever the end of the peg inside the shoe can be operated by moving a rod on the opposite end of the exhibit. In the commercial machine this rod is operated automatically by connections which extend down through the horn across the base of the machine and up through the machine frame to the driving shaft.

The pegging machine at the Whitman factory which was discussed by Mr. Chapman in his answer to question 70 is not now in the condition in which it was when it was purchased from John F. Davey in 1895. The machine is now provided with a "jack" or work support which is constructed substantially as illustrated and defined in the claims of patent No. 919,424, April 27, 1909, Cuff, which patent is owned by the United Shoe Machinery Company. The jack shown and claimed in that patent is known as "No. 8 Jack", and is supplied in large numbers by the United Shoe Machinery Company for use on loose-nailing machines and machines for slugging the toplifts of heels. As no photograph of the pegging machine at the Whitman factory has been introduced in evidence, and as I have had no opportunity to photograph that machine,

I have had a photograph made of Davey pegging machine No. 79, which was one of the machines constructed as shown in patent No. 555,434, February 25, 1896. According to Mr. Davey's records, the machine at the Whitman factory is No. 76, although in my examination of that machine I was not able to find any number on the machine. I have, however, compared the photograph which I now produce with the machine at Whitman, and I find that it shows accurately the machine as it was sold to the Commonwealth Shoe & Leather Company by Mr. Davey in 1895. The horn which was then on the machine and which is shown in this photograph is not now on the machine, but is lying on a shelf near it.

[*Photograph of old Davey pegging machine equipped with horn, patent No. 555,434, February 25, 1896, is introduced in evidence, and marked "Defendants' Exhibit 126".*]

[*Answer to Int. 61 continued:*]

After having made the photograph Exhibit 126, I had the horn shown in that exhibit removed from the machine and had a No. 8 jack, such as is on the machine at Whitman, substituted for the original horn. I now produce a photograph showing the Davey pegging machine of 1895 equipped with a No. 8 jack. I have compared this photograph with the pegging machine in the Whitman factory and find that it shows accurately that pegging machine in its present condition, with the unimportant exception that the shape of the upright rod which is supported in bearings extending from the machine frame, and which carries at its upper end the jack, is slightly different in the pegging machine at the Whitman factory.

[*Photograph of old Davey pegging machine equipped with No. 8 jack is introduced in evidence, and marked "Defendants' Exhibit 127".*]

Mr. WEBSTER. Please note the petitioner's objection to introduction of this exhibit as having no bearing on the questions at issue in this cause.

[*Answer to Int. 61 continued:*]

I also produce a photograph of the present commercial Davey pegging machine, the machine which is illustrated on page 76 of

Plaintiff's Exhibit 190, being the United Shoe Machinery Company catalogue of 1902, with which illustration Mr. Chapman compared the pegging machine at the Whitman factory. Comparison of this photograph with the photograph which I have produced showing substantially the present condition of the pegging machine at the Whitman factory will be of interest in considering the accuracy of Mr. Chapman's comparison.

[*Photograph of commercial Davey pegging machine shown in Plaintiff's Exhibit 190, page 76, is introduced in evidence, and marked "Defendants' Exhibit 128".*]

Mr. WEBSTER. Please note at this point the objection of counsel for petitioner to the unwarranted criticism by this witness of Mr. Chapman. Counsel for petitioner also objects to the statements heretofore made by this witness relating to what he learned from Mr. Davey's records, and any information which he obtained with reference to the machine at the Whitman factory from others, as hearsay, and therefore inadmissible and incompetent.

[*Adjourned to 10 A. M., Thursday, October 9, 1913.*]

BOSTON, MASS., October 9, 1913.

*Int. 62.* Please state whether in a commercial Davey pegging machine as put out by the United Company in February, 1899, there was embodied the subject-matter of any patent, and if the machine has been improved since February, 1899, please state what the improvements were, what was the reason for making them, and whether or not these improvements are described in any patents owned by the United Company; if so, name the patents.

*Ans.* The Davey pegging machine as supplied to shoe manufacturers in 1899 and just prior to that time was organized substantially as is shown in patent No. 581,066, April 20, 1897, Davey and Ladd. Nearly all of the thirty-two claims of that patent set forth mechanisms which were embodied in the commercial machine at that time. Typical claims of the patent are 1 and 5, which are as follows:—

"1. The combination of a rotatable horn or work support provided with a work supporting surface, and with a pair of cutting

jaws both movable with relation to said surface, and actuating mechanism therefor, substantially as described."

"5. The combination of the horn or work support capable of complete rotation and having a tip provided with a perforation concentric with the axis of rotation of the horn, a cutting device in said horn and means to move it to cut the peg tip, a pegging mechanism comprising an awl and driver and means for moving said awl and driver laterally to feed the material, and actuating mechanism for driving the awl longitudinally into the material at or near the beginning of said lateral feed movement, and for moving the awl wholly through the material at the completion of said lateral movement, substantially as described."

The organization of the two claims which I have just quoted solved for the first time in the history of the industry the problems which had to be dealt with in organizing a pegging machine which should cut off the ends of the pegs projecting through the stock inside of the shoe.

Among the most important of these problems was the provision of a peg-cutting organization which could be incorporated in a horn tip which was small enough to permit the driving of pegs at any point where they needed to be driven, to secure the sole properly, and obviously the horn tip must be small in order to permit proper operation at the toe; the organization of the horn tip with its peg-cutting mechanism in such manner that the stock would be supported against the thrust of the awl and the stroke of the driver forcing the peg through the stock on both sides of the stock closely adjacent to the point where the awl hole was made and the peg was driven; and, further, the machine must be so organized that the awl will form a hole which is at least as long as the peg to be inserted in the hole, because a wooden peg differs from a metal fastening in that it must have formed for its reception a hole which shall be at least as long as the peg; otherwise the wooden peg will break or splinter and cannot properly be driven.

As to the problem of forming a hole for the peg, it follows from what I have said that in the class of work for which pegging machines have generally been used and for which they are primarily intended, that is, attaching out-soles, the hole for the peg must be made entirely through the stock, comprising the out-sole and insole,

and in making this hole the machine must be so organized that the point of the awl may pass entirely through the insole and emerge beyond its inner face inside of the shoe.

The mechanism of the 1899 machine shown, as I have stated, in patent No. 581,065, which was employed in that machine for cutting off the ends of the pegs inside of the shoe as the pegs were driven, has, since the formation of the United Shoe Machinery Company, been reorganized so that its commercial form is now as shown in patent No. 1,028,240, June 4, 1912, McFeely (original application filed March 24, 1900).

The reorganization of the cutter-operating mechanism which is illustrated in the drawings of this patent No. 1,028,240, and which constitutes the subjects-matter of all of the twenty-eight claims of the patent, was necessitated by the fact that in the organization of the 1899 machine, when the horn was depressed to accommodate thicker stock, the cutters were necessarily moved toward each other, and when the stock was unusually thick the cutters were moved so near each other that they were sometimes in the way of the awl as it emerged from the stock inside of the shoe. This frequently resulted in breaking of the cutters and sometimes, also, the point of the awl was broken. These defects were entirely removed by the improvements of patent No. 1,028,240 by which the mechanism was so organized that vertical movement of the horn to whatever extent produced no effect whatever upon the cutters. A typical claim of patent No. 1,028,240 setting forth this improvement is the fifth, which is as follows:—

"5. In a pegging machine, the combination with a vertically movable horn; of a cutting device operating in said horn; means for operating the cutting device located independently of the horn; and connections from said means to said cutting device so constructed and arranged that the cutting device is actuated only by said means and is unaffected by vertical movements of the horn."

Mr. WEBSTER. Please note at this point petitioner's objection to all reference to patents issued since the date of the filing of the petition, for reasons heretofore given.

[*Answer to Int. 62 continued:*]

Further improvements in the present commercial machine relat-

ing to the so-called "button" which forms the bearing surface for the stock at the extreme tip of the horn, and which encloses and holds in position the cutter, are also disclosed and described in the claims of patent No. 1,028,240 and may be noted in Defendants' Exhibit No. 125. The cutters in the horn tip have frequently to be renewed and in the construction of the machine as put out in February, 1899, it was inconvenient to get out the old cutters and to replace them, and difficulty was occasioned by the means employed for securing the button to the horn. The present commercial construction is defined in a number of claims of patent No. 1,028,240, of which a typical claim is 28:—

"28. The combination with the horn provided with inner concave cylindrical bearing surfaces at opposite sides; of a pair of cutter jaws provided with convex cylindrical bearing surfaces at their outer sides and concave cylindrical bearing surfaces at their inner sides; and a cylindrical bearing member extending transversely through the horn to afford a support for the inner bearing surfaces of the cutter jaws; substantially as described."

This machine is now, and has been since February, 1899, put out by the United Company through its metallic department.

*Int.* 63. Have you collected in a volume the patents referred to by you in your testimony as relating to the Davey pegging machine?

*Ans.* Yes, sir; and I produce the volume. [Witness produces volume.]

Mr. PHILLIPS. We offer this.

[Volume of patents relating to pegging machines introduced in evidence, and marked "Defendants' Exhibit 129".]

Mr. WEBSTER. Petitioner objects to the introduction of patents dated since the date of the filing of the petition herein, the objection being for the reasons heretofore given.

*Int.* 64. Will you please give the number, the date and names of the patentees of the several patents included in the volume which has just been offered in evidence as Defendants' Exhibit 129?

*Ans.* No. 21,593, September 21, 1858, Sturtevant.

No. 34,335, February 4, 1862, Sargent.

No. 44,048, August 30, 1864, Sargent.

No. 555,434, February 25, 1896, Davey.

No. 581,066, April 20, 1897, Davey and Ladd.

No. 919,424, April 27, 1909, Cuff.

No. 1,028,240, June 4, 1912, McFeely.

#### SKIVING MACHINE: AMAZEEN.

*Int. 65.* What is the function of the Amazeen skiving machine such as referred to by Mr. Chapman in his answer to interrogatory 71?

*Ans.* The Amazeen skiving machine is used to form a wide beveled thin edge on parts of uppers which are subsequently to have that edge folded in order to impart to the edge the finished appearance which is desired in prominent parts of the upper of the shoe. The purpose of the operation is to permit the folding of the stock, that is, the turning over of its extreme edge upon the body of the stock without unduly increasing the thickness of the finished edge, which, without such skiving, would obviously be of double the thickness of the stock. A sample of the work done on the Amazeen skiving machine is shown in Defendants' Exhibit 28.

*Int. 66.* What was the first patent showing the skiving machine of the Amazeen type?

*Ans.* The first patent of which I am aware disclosing the Amazeen type of skiving machine is patent No. 200,682, February 26, 1878, Amazeen. I am not advised as to the extent of use of the machine constructed under that patent, but patent No. 220,906, October 28, 1879, Amazeen, shows the first commercial Amazeen skiving machine which was put into commercial use. In later years the machine which was constructed as shown in the drawings of that patent was known as "Amazeen Skiving Machine, Model No. 1".

A typical claim of patent No. 200,682 is the third, as follows:—

"3. The combination of a feeding device and a revolving cutting device, both substantially as above described, the cutting edge, when making a cut, moving away from the feed and in a direction across the line of feed, as set forth."

*Int. 67.* Have you examined the Amazeen skiving machines at the Whitman factory of the Commonwealth Shoe & Leather Com-

pany? If so, please state whether the machines which you examined embodied the subject-matter of any patent. If so, please name the patent.

*Ans.* I have examined the Amazeen skiving machines at the factory of the Commonwealth Shoe & Leather Company, and find that three of these machines are of the type known as "Amazeen Skiving Machine, Model 6", and are constructed substantially as shown on page 132 of Plaintiff's Exhibit 190, being United Shoe Machinery Company catalogue of 1902, with the exception that these three machines are provided with mechanism illustrated in the drawings of patent No. 452,996, May 26, 1891, Dunham. In addition to the mechanism shown in this Dunham patent the machines embodied the mechanisms which are illustrated and set forth in the claims of the following patents:—

- No. 609,868, August 30, 1898, Bayley.
- No. 632,984, September 12, 1899, Bayley.
- No. 636,942, November 14, 1899, Bayley.
- No. 645,381, March 13, 1900, Bayley.

In addition to these three model 6 Amazeen skiving machines, I found in the Whitman factory a number of old machines of various types, some of which were of the type now designated as the model 3 Amazeen skiving machine and others of which I was not able to identify as having been manufactured either by the United Shoe Machinery Company or by its predecessor, the Amazeen Machine Company. All of these old machines, however, were organized as is illustrated in the drawings and set forth in the claims of patent No. 452,996, May 26, 1891, Dunham, which patent has been owned by the United Shoe Machinery Company and by its predecessor, the Amazeen Machine Company, since June 10, 1898.

*Int.* 58. Please state what improvements, if any, have been made by the United Shoe Machinery Company or its predecessor, the Amazeen Machine Company, upon the old type of machine which, as you state, is known as model 3. In answering this question please state the reason for such improvements as have been made, and whether such improvements constitute the subject-matter of United States Letters Patent. If so, name them.

*Ans.* The first improvement upon the model 3 machine consisted in means for providing ready adjustment of the relative positions of the knife and feed roll. This is a delicate adjustment and has to be made frequently, owing to the fact that the knife has to be ground very often — several times a day. This grinding decreases rapidly the diameter of the circular knife and wears it down so fast that the knife has to be renewed after a period from two to six weeks, according to the skill of the operator in grinding. This improvement provided a satisfactory quick adjustment for the relative positions of the cutter and feed roll, and before this improvement was made that adjustment was an awkward performance. This improvement is set forth in patent No. 518,774, April 24, 1894, Bayley. A typical claim of this patent, directed to this improvement, is the first :—

"1. In a skiving machine, the combination with a cutter to skive the material, of a rotating work supporting or feeding wheel, its shaft, and a yoke or frame therefor, and adjusting devices to adjust said yoke or frame toward and from said cutter and in a plane parallel with the plane of said cutter, substantially as described."

This patent No. 518,774 also illustrates and sets forth in its claims another improvement which represented a substantial advance in the machine. It is essential for the formation of a satisfactory bevel in the skiving operation that the extreme forward acting portion of the circular knife be located as nearly as possible in the middle of the bevel, whatever be the width of the bevel being formed by the knife. If the cutter is not so located it will cause buckling of the stock, and when that happens the knife will cut into the body of the stock and spoil the upper blank which is being operated. The improvement which contributed means for effecting this adjustment in the Amazeen skiving machine is set forth in claims of patent No. 518,774, April 24, 1894, Bayley, and a typical claim is the sixth :—

"6. In a skiving machine, the following instrumentalities, viz.: — A work supporting and feeding wheel, a rotating skiving cutter, bearings for the same and a carrier for the said cutter and its bearings, said carrier being adjustable longitudinally with relation

to said work supporting and feeding wheel, substantially as described."

When the machine had been reorganized to incorporate the two improvements to which I have referred, and which are illustrated and set forth in the claims of patent No. 518,774, the reorganized machine rapidly displaced the model 3 machines, that is, the machines which were like some of the old machines now in the Whitman factory, to which I have referred.

The next step in the development of the Amazeen skiving machine was the provision of a convenient organization for effecting the knife-grinding operation which, as I have explained, has to be performed several times a day, as the knife must be kept extremely sharp at all times during its operation. This improvement provided a grinder which could be moved instantly into and out of operative grinding relation to the knife, and which also moved with the knife in every one of the numerous adjustments which have to be made in the position of the knife. This improvement is illustrated in the drawings and set forth in the claims of patent No. 609,868, August 30, 1898, Bayley. A typical claim of this patent is the first:—

"1. The combination with a rotary disc cutter and movable bearing bracket or support therefor, of a grinder and grinder shaft and bearing frame or bracket therefor supported on said cutter shaft bracket, and means for adjusting the position of the grinder bracket upon the cutter bracket, whereby the said grinder may be set in proper position with relation to the cutter and retained therein independently of changes of position of the cutter, substantially as and for the purpose described."

The next improvement in the Amazeen skiving machine provided the machine with a sleeve bearing for the knife shaft, so constructed that the sleeve can be readily removed from the machine and the cutter shaft taken out without dismantling the machine. The purpose of the improvement is set forth in the following typical claim of patent 632,984, September 12, 1899, Bayley:

"1. In a skiving machine, the combination with a rotary knife shaft, of a sleeve surrounding and supporting said shaft, a movable bracket, means for detachably holding said sleeve in said movable

bracket, whereby the sleeve may be quickly and easily withdrawn to permit the removal of the knife without disturbing the relationship of the sleeve to the shaft."

The specific construction of this sleeve is illustrated in the drawings and set forth in the claims of patent No. 645,381, March 13, 1900. All of the seven claims of this patent set forth constructions embodied in the machine, and claim 1 is typical:—

"1. As a new article of manufacture a sleeve bearing for rotary longitudinally adjustable shafts, the same comprising cylindrical end portions and an open side intermediate connecting portion of enlarged interior diameter, substantially as and for the purpose described."

Improved mechanism which was embodied in the machine, and enabled the making of fine angular adjustments of the knife to vary the inclination of the bevel made on the stock, is shown and set forth in all of the six claims of patent No. 636,942, November 14, 1899, Bayley. A typical claim of this patent is the first:—

"1. A skiving machine embodying in its construction a feed bed or roll, the frame, a block having a sliding connection relatively to the frame, a pivoted bracket on the block, a knife carried by the bracket and operating at an angle with respect to the surface of the feed roll, means carried by the stock for effecting a tilting adjustment of the bracket on the block, and means for fixing the bracket in adjustable position on the block."

All of the improvements set forth in the patents which I have been discussing were incorporated in the model 6 Amazeen skiving machine which is shown on page 132 of Plaintiff's Exhibit No. 190, the United Shoe Machinery Company catalogue of 1902. These improvements are also embodied in the three model 6 Amazeen skiving machines which I examined at the Whitman factory of the Commonwealth Shoe & Leather Company.

Since February, 1899, further improvements have been embodied in the Amazeen skiving machine. The first of these improvements is illustrated in the drawings, and forms the subject-matter of the eight claims of patent No. 823,586, June 19, 1906, Davenport. The model 6 machine was organized to run at high speed, but it was not practicable to run it at the highest speed of which it was

capable because it would not operate properly around curved or irregular portions of the edge of the shoe. The improvement of patent 823,586 made it practicable to run the machine at higher speed than had before been commercially practicable. A typical claim is the first:—

“ 1. In a machine of the class described, a device for operating upon the work, in combination with independent mechanism for feeding the work to said operating device, said work feeding mechanism comprising a feed disc, means to actuate said disc, and a connection between said actuating means and said disc arranged to permit the movement of the feeding disc to be retarded by resistance applied to said disc and to allow the actuating mechanism to move independently of said disc.”

This improvement enabled the operator to retard the feeding of the stock when he was operating upon curved or irregularly shaped portions of the shoe.

It had long been desired to provide No. 6 model of the Amazeen skiving machine with a belt-driving mechanism for the knife. Equipping the machine with such a mechanism, while it would seem an apparently simple matter, involved difficulties owing to the frequent adjustments in directions at right angles to each other which had to be made in the cutting knife and its shaft, and adjustments which varied the vertical inclination of the cutter shaft. In the model 6 machine the cutter shaft was operated by gears and when the cutter shaft was moved bodily in various adjusting operations, which had frequently to be made, it was necessary to move the gear on the driving shaft which operated the cutter shaft, and, further, those gears were not a satisfactory mechanical arrangement because they were not well adapted for operating the cutter at the high speed at which it must be driven. There have been provided by the construction shown in Dunham patent No. 452,996, to which I have referred, a belt-driving attachment which had been applied to many of the old model 3 machines, and to some of the No. 6 machines, but a more satisfactory mechanism for securing the advantages desired is illustrated in drawings and set forth in the claims of patent No. 823,578, June 19, 1906, Bayley. This mechanism also discloses means for preventing the side pull which

the belt would tend to exert upon the cutter shaft, and which would interfere with the delicate adjustments required by the nature of the work of the machine. These two improvements are set forth in all of the seven claims of patent No. 823,578, of which typical claims are 1 and 8 : —

"1. A skiving machine comprising a machine frame, a knife frame, adjustable with relation to the machine frame, a driving shaft carried by said machine frame and provided with a pulley, a movable knife carried by said knife frame, idle pulleys also carried by said knife frame, and a belt connecting said driving pulley and said movable knife to actuate the latter, said belt being adapted to be passed around said idle pulleys, whereby the tension of said belt is maintained substantially uniform in the varying relative adjustments of the said frames."

"8. In a skiving machine, a shaft mounted in suitable bearings, a rotary skiving knife mounted on said shaft, a pulley carried by said shaft near one end, and an adjustable half bearing for said shaft at the end adjacent to the pulley to support the shaft against lateral strain."

The mechanism set forth in claim 1 permitted any desired adjustment of the knife for the character of the work or to compensate for grinding, while in the old machines at the Whitman factory, which are provided with the belt-driving attachment of the Dungan patent 452,996, any substantial adjusting movement of the knife requires corresponding adjustment of the belt-driving mechanism.

When the improvements of patents No. 823,578 and No. 823,-586 were incorporated in the machine, the machine was known as "Model 7", and that model is, and has been for several years, the standard commercial Amazeen skiving machine put out by the United Company.

The improvements which I have described, and which have been incorporated in turn in the model 6 and model 7 Amazeen skiving machines are important, because outside of what is known as the Brockton or South Shore district these skiving machines are almost universally run by girls and their operation of the machine is, of course, greatly facilitated by the advantages afforded by the numerous improvements which I have discussed. This machine is

put out by the United Shoe Machinery Company through its general department.

*Int.* 69. Have you collected in a volume the patents relating to the Amazeen skiving machine with regard to which you have been testifying?

*Ans.* I produce a volume which comprises copies of each of the patents which I have mentioned in my discussion of the Amazeen skiving machine.

[*Volume of patents so produced is offered in evidence, and marked "Defendants' Exhibit 130".*]

*Int.* 70. Please give the number, date and name of the patentee of the several patents contained in the volume which has just been offered in evidence as Defendants' Exhibit 130.

*Ans.* No. 200,682, February 26, 1878, Amazeen.

No. 220,906, October 28, 1879, Amazeen.

No. 452,996, May 26, 1891, Dunham.

No. 518,774, April 24, 1894, Bayley.

No. 609,868, August 30, 1898, Bayley.

No. 632,984, September 12, 1899, Bayley.

No. 636,942, November 14, 1899, Bayley.

No. 645,381, March 13, 1900, Bayley.

No. 823,578, June 19, 1906, Bayley.

No. 823,586, June 19, 1906, Davenport.

#### LASTING MACHINES.

*Int.* 71. State briefly the function of the lasting machine and the place of the Chase machine in the lasting machine art.

*Ans.* The operation of lasting consists of drawing or straining the upper over the last to which it is to be fitted and which determines the shape of the shoe, and securing the upper to the insole which is located on the bottom of the thread face of the last, and in welt shoes and in the better grades of McKay shoes has previously been tacked to the last. There are two general types of lasting machines. One is known as the "bed" type. In this type of machine the last and shoe are supported on two supports comprising a heel support and a toe rest, and the upper materials are

worked over into lasted position at the heel and the toe by means of devices known as "wipers". Also at the heel end the upper materials, including the stiff "counter", that is, the piece of sole leather or other material as leather board, which preserves the shape of the shoe at the heel while it is being worn, are wrapped around the heel end of the last and forced into close fitting engagement with the last by means known as a "heel band". In the bed type of lasting machine the securing of the upper to the insole in lasted position is not automatic, but is accomplished by driving tacks into the upper at the necessary points by the use of what is known as a "hand tacker", except around the toe of welt shoes, in which region it has been the practice since about 1898 to secure the upper materials in lasted position, welt work only wired, by means of a wire which is secured to a tack at one side of the toe and is carried around the toe and secured to another tack on the opposite side.

Of the bed type of lasting machine are the Chase lasting machine, the Ideal lasting machine, the McKay & Copeland lasting machine and the comparatively new No. 5 lasting machine, which is the present commercial machine supplied by the United Company.

In the other type of lasting machine, which is known as the "hand method" type, the upper is worked over the last and automatically secured in position by a step-by-step operation. This type of machine includes grippers for seizing and pulling the upper at successive points around the shoe, wipers co-operating with these grippers for forcing the upper down closely on the insole after it has been gripped and pulled by the grippers, and tacking mechanism for securing the upper in the lasted position in which it has been placed by the grippers and wipers. And these mechanisms are all operated automatically and the organization operates step by step successively upon different portions of the shoe. Of this type is the Consolidated hand method lasting machine.

As to the place of the Chase lasting machine in the lasting machine art, in 1899 the Chase lasting machine was the standard machine for lasting men's welt shoes, and substantially all men's

welt shoes which were being lasted by machine in 1899 were being lasted on the Chase lasting machine.

*Int.* 72. Was the Chase machine the first lasting machine in use? If not, what preceded it?

*Ans.* The first patent of which I am aware disclosing a lasting machine of the bed type is No. 25,673, October 4, 1859, Purington. That patent was reissued as No. 1,382, reissued January 6, 1863, Purington. The first claim of the reissued patent is as follows:—

“1. Compressing the upper around the last by means of clamps provided with projecting plates or flanges to turn the projecting edges of the upper over upon the insole or last in any manner, substantially as described.”

The Purington machine was reorganized by the improvements of patent No. 28,120, May 1, 1860, Wells, and patent No. 41,967, March 15, 1864, Wells.

The first claim of patent No. 41,967 is as follows:—

“1. The combination of hinged or folding flanges with the end jaws, heel, and toe.”

As further improved by patent No. 44,916, November 1, 1864, Fischer, and No. 90,651, June 1, 1869, Fischer, this machine was put out and commercially used to a considerable extent in the late '60's and '70's. The commercial machine was constructed as shown by the patent No. 44,916 with the wipers shown in No. 41,967 and the tipping toe head illustrated in No. 90,651.

#### LASTING MACHINE: CHASE.

*Int.* 73. Mr. Chapman has referred to certain Letters Patent, namely,—

No. 340,860, April 27, 1886;

No. 364,088, May 31, 1887;

No. 376,368, January 10, 1888;

No. 483,375, September 27, 1892;

all to Chase, as for inventions embodied in the Chase machine. Describe briefly the subjects-matter of these patents as the same were embodied in the Chase machine of 1899.

*Ans.* The first patent referred to by Mr. Chapman, No. 340,860, April 27, 1886, Chase, illustrated a step in the development of the "retarder", which is shown in the form in which it was commercially used in 1899 in patent No. 364,088, May 31, 1887, Chase, which was also referred to by Mr. Chapman. The commercial construction in 1899 is set forth in claims 1 and 2 of patent No. 364,088.

The construction of claims 3 and 4 of patent No. 364,088 was superseded in the commercial machine before 1899 by the improvement shown in patent No. 376,368, January 10, 1888, Chase. The adjusting screws shown in patent No. 364,088 as arranged to adapt the ends of the toe clasp to the shape of the toe were, in the later construction, used merely to limit the outer opening movement of the ends of the clasp as set forth in claim 4 of patent 376,368.

Claim 9 of that patent 364,088 describes specifically the wiper-operating mechanism and claims 10 and 11 are directed to the construction of the toe clasp of the machine.

The other patent referred to by Mr. Chapman, No. 483,375, September 27, 1892, illustrates and sets forth in its claim specifically the hand tacker which was being used in connection with the Chase lasting machine in 1899.

*Int.* 74. State whether or not in the Chase machine of 1899 there were embodied the subjects-matter of any patents of the United Company other than those named by Mr. Chapman. If so, which patents?

*Ans.* Patents not mentioned by Mr. Chapman which set forth mechanisms embodied in the commercial Chase lasting machine in 1899 are : —

- No. 545,022, August 27, 1895, Chase.
- No. 566,831, September 1, 1896, Willard.
- No. 569,182, October 13, 1896, Dunphy.
- No. 569,231, October 13, 1896, Ray.
- No. 571,339, November 17, 1896, Chase.
- No. 571,404, November 17, 1896, Shaw.
- No. 571,429, November 17, 1896, Chase.

About 1895 the Chase lasting machine was reorganized and the

new machine which was first put out in 1895 and was being put out in 1899 was known as the "High Speed Chase Lasting Machine". That machine, of which the general organization is shown in patent No. 571,429, November 17, 1896, Chase, with the modifications shown in No. 571,404, November 17, 1896, Shaw, superseded in 1895 the old type of Chase lasting machine which was constructed substantially as shown in the patents which were discussed by Mr. Chapman.

The reorganization of the Chase lasting machine, which, as I have stated, took place in 1895, was required by the changing commercial conditions at about that time. At that date the use of stiff box toes was becoming more general and added to the problems of securing good lasting. I should explain that a box toe is a piece of sole leather or other stiff material which serves the purpose in the finished shoe and during its wear of maintaining the shape of the toe. Defendants' Exhibits 109 and 110 are provided with box toes. The problem of lasting the toes of shoes provided with such stiff box toes, the edges of which constitute a part of the upper material which must be shaped to the toe, forced down upon the bottom of the insole and secured in lasted position, was one of the problems confronting the manufacturers of the Chase lasting machine just prior to 1895 which led to the reorganization of the machine.

Another important reason why the reorganization of the Chase machine was necessary in 1895 was that about 1895 radical changes were made in the styles of lasts and the old type of Chase lasting machine was not organized properly to last shoes on the last which went into use in 1895. Prior to about 1895 the lasts which were in general use did not present difficult problems for the lasting machine. I produce a last such as was in use in 1893 and 1894.

[*Last used in 1893-1894 is introduced in evidence, and marked "Defendants' Exhibit 131".*]

[*Answer to Int. 74 continued:*]

The first step in the development away from lasts such as shown in Defendants' Exhibit 131 was toward narrower-toed lasts. A step in this development is illustrated in the last which I now pro-

duce, which was used in 1895 to 1898 and was known as the "Cottage toe".

[*"Cottage toe" last, 1895-1898, is introduced in evidence, and marked "Defendants' Exhibit 132".*]

[*Answer to Int. 74 continued:*]

After the introduction of the cottage toe last, the next step toward modern shapes of lasts was the "Tokio" last, which also was introduced and used during the period from 1895 to 1898.

[*"Tokio" last, used in 1895-1896, is introduced in evidence, and marked "Defendants' Exhibit 133".*]

[*Answer to Int. 74 continued:*]

This tendency toward narrower toes was carried to an extreme in this period between 1895 and 1898, as shown in the "razor toe" last, which I now produce and which was also used during that period from 1895 to 1898.

[*"Razor toe" last, 1895-1898, is introduced in evidence, and marked "Defendants' Exhibit 134".*]

[*Answer to Int. 74 continued:*]

The extreme limit of this development toward narrower toe lasts was an even narrower last which was known as the "needle toe" last.

With the introduction of narrow-toed lasts came new shapes for the heel ends of lasts which, before 1895, had been nearly symmetrical at the heel ends, that is, with the faces of the heel on the opposite sides substantially alike. On looking at the heel end of the "cottage toe" last, Defendants' Exhibit 132, it will be observed that the opposite sides of the heel are not symmetrical and in the "razor toe" last, which is Defendants' Exhibit 134, lack of symmetry will be observed on looking at the bottom of the heel end of the last. This last of symmetry in the heel ends of the lasts presented problems for the lasting operations with which the Chase lasting machine as it was constructed prior to 1895 could not deal. The problems were increased by the further modification in styles of lasts resulting in the introduction of lasts which have come to be known as "crooked lasts", which went into general use soon after 1895. I produce a last which was used in the period from 1899

to 1901, which was known as the "Bull Dog" last. This last shows the development toward the crooked lasts and also illustrates the lack of symmetry in the opposite sides of the heel which has characterized most of the lasts used during the past twelve or fifteen years.

[*"Bull Dog" last, 1899-1901, is introduced in evidence, and marked "Defendants' Exhibit 135".*]

[*Answer to Int. 74 continued:*]

An explanation of the improvements which adapted the reorganized Chase lasting machine which was introduced in 1895 and, as I have stated, was then known as the "High Speed Chase Lasting Machine", may advantageously be made in connection with a discussion of the patents which I have enumerated as showing the reorganized machine as it was adopted and first put out in 1895. Referring first to patents No. 571,404, November 17, 1896, Shaw, and No. 571,429, November 17, 1896, Chase, which together show the reorganized Chase lasting machine first put out in 1895, and as put out in 1899 the invention of the Shaw patent No. 571,404 enabled the operator to withdraw the toe-lasting mechanism from the toe during the lasting operation to observe whether he was properly lasting the toe portion of the shoe and to do this without disturbing at all the relation of the heel-lasting mechanism to the shoe. In the old Chase machine which was constructed prior to 1895, when the operator wished to examine the toe during the lasting operation he had to release the shoe entirely from the machine as the shoe was held in position in the machine by clamping engagement of the toe clasp at the toe and the heel band at the heel, and when the pressure of either of these was released the shoe was no longer held by the machine and when the operator resumed operations he had practically to begin his work all over again. As the lasting of the toe portion of the shoe is the most critical part of the operation and was rendered more so by the introduction of the narrow toes illustrated in the lasts which I have produced, it became even more necessary for the operator frequently to examine the toe during the lasting operation to see whether he was properly performing the work and in order that he might remove

any wrinkles which he found had been formed in the upper on account of the puckering which takes place around the curved portion of the toe during the lasting of the toe.

The organization of the new machine of 1895 by which the operator was enabled to release the toe-lasting mechanism to inspect the toe without affecting the heel-lasting mechanism is shown in patent 571,404, November 17, 1896, and is defined in the claim of that patent.

In my general description of the bed type of lasting machine I explained that the upper materials at the heel end of the shoe, including the counter or stiffening piece, are wrapped around the heel end of the shoe in a bed type of lasting machine by a mechanism comprising a "heel band". The problem of getting the upper materials into close engagement with the sides of the heel end of the last was provided for in the new machines by improvements set forth in a number of claims of patents 571,404, November 17, 1896, Chase, of which a typical claim is 13 : —

" 13. In a lasting machine, the combination of a pad with a pad support having independently movable longitudinal sections at each end, substantially as and for the purpose set forth."

Another improvement set forth in the claims of this patent 571,-429, which contributed to the convenience of the operator was the organization of the toe-lasting mechanism by which the toe rest or support for the toe end of the shoe moved with toe-lasting mechanism when that mechanism was adjusted for longer or shorter shoes. A typical claim is 20 : —

" 20. In a lasting machine, the combination of movable toe rest and reciprocating toe lasting mechanism, the toe rest moving with the shoe in the direction of the length of the shoe when the toe rest is reciprocated, substantially as and for the purpose set forth."

The lasting of russet and patent leather shoes was provided for in the reorganized Chase machine of 1895 by arranging the toe rest so that it would move with the shoe during such relative movements of the shoe and lasting mechanisms as occurred during the operation. This improvement prevented discoloring russet shoes

and marring patent leather shoes, and is defined in claim 26, as follows : —

“ 26. In a lasting machine, the combination of an end lasting mechanism with a toe rest which moves with the shoe in the direction of the length thereof by contact therewith, substantially as and for the purpose set forth.”

It may be of interest to note that the mechanism set forth in this claim 26, which I have just quoted, has always, since its adoption, been embodied in the Chase machine and has always been incorporated in the successor to the Chase machine, which is the No. 5 lasting machine, the present commercial bed machine of the United Company, and was also embodied in the lasting machine which was constructed and used by Thomas G. Plant.

The problems in the lasting of the toe ends of the new types of lasts which were introduced, as I have explained, about 1895 and soon after that time were solved by the inventions of patents 569,-182, October 13, 1896, Dunphy, and 569,231, October 13, 1896, Ray. The Dunphy patent 569,182 discloses and claims means used in the reorganized Chase machine for crowding the ends of box toes into their proper place at the ends of the tip seam. Those were the points where the greatest difficulty occurred in the lasting of box toes, as the stock at each end of the tip seam was thicker than at other portions of the toe. Claim 1 of the Dunphy patent is as follows : —

“ In a lasting machine, the combination of a toe wiper carriage, and toe wiping instrumentalities with a flexible toe clasp, having at its ends rigid, pivotally connected toe cap pressure blocks, and between its ends a guide extension ; and with a facing pad mounted on the face of said flexible toe clasp and of its rigid, pivotally connected toe cap pressure blocks, substantially as and for the purpose set forth.”

Prior to the invention of the Ray patent 569,231 it had been necessary for the operator, whenever the shape of the toe of the last next to be operated upon differed substantially from the toe of the last upon which the machine had been operating, to substitute for the toe clasp which he had been using another toe clasp properly shaped to operate upon the new shape of toe. These

clasps prior to the improvement of the Ray patent cost \$1.50 each, and it would have been necessary under the changing conditions, with widely varying shapes of toes, for the manufacturer to have had two toe clasps for each shape of last, one for right shoes and one for left. With the improved construction of the Ray patent No. 579,231 it was only necessary for the operator to change the contact piece in the toe clasp, which cost only forty cents each. This Ray improvement is set forth in all of the six claims of patent No. 569,231, October 13, 1896, of which a typical claim is the first : —

" 1. As a new article of manufacture, a pad holder for lasting machines, the same comprising a clasp and one or more pad keepers projecting beyond the inner face of the clasp and provided with angular ends substantially as and for the purpose set forth."

It may be of interest to note that the improvement of this patent No. 569,231 was also embodied by Thomas G. Plant in his lasting machine.

*Int. 75.* State whether or not you have examined the Chase lasting machine in the factory of the Commonwealth Shoe & Leather Company of Whitman which was referred to by Mr. Chapman ; if so, please state what class of shoes are being lasted on the machine, and whether or not all the shoes made in that factory are being lasted on those Chase lasting machines. Please state also whether those Chase lasting machines embody the subjects-matter of any of the patents not mentioned by Mr. Chapman which you have stated were in the Chase lasting machine in 1899.

*Ans.* I have examined the Chase lasting machines in the factory of the Commonwealth Shoe & Leather Company at Whitman which are referred to by Mr. Chapman. I found that those five machines were being used exclusively in the manufacture of long legged boots. The Commonwealth Shoe & Leather Company make a specialty of long legged boots, which are manufactured only in comparatively small numbers at the present time. So far as I can learn there are only ten factories in the country, out of a total of some 1200 manufacturers, in which long legged boots are made at all, and in those factories they constitute only a portion of the

work. The number of long legged boots manufactured is about one-tenth of one per cent of the number of shoes which are made.

The regular work at the Commonwealth Shoe & Leather factory, that is, shoes both high and low, is not being done upon the Chase lasting machine, but is being performed by the thirty-eight No. 5 lasting machines which are in that factory. The No. 5 lasting machine is the present standard bed lasting machine of the United Shoe Machinery Company.

The Chase lasting machines in the Whitman factory embody mechanisms which are set forth in the claims of the following patents :—

No. 569,182, October 13, 1896, Dunphy.

No. 569,231, October 13, 1896, Ray.

No. 571,429, November 17, 1896, Chase.

No. 1,053,612, February 18, 1913, Keyes (application filed December 26, 1908.)

**Mr. WEBSTER.** Please note petitioner's objection, for reasons heretofore given, to any patent issued after the date of the filing of the petition herein.

*Int. 76.* What lasting machines other than the Chase machine, if any, were manufactured and put into use by the United Company in the year 1899?

*Ans.* In addition to the Chase lasting machine the United Company was supplying to manufacturers in 1899 the Ideal lasting machine, McKay & Copeland lasting machine and the hand method lasting machine.

*Int. 77.* State whether or not after the organization of the United Company machines which generally speaking were of the type of the Chase lasting machine were designed and put out having in them modifications and improvements forming the subjects-matter of Letters Patent of the United Company. State the patents, if any.

*Ans.* I have previously referred to the development of the industry which took place about 1895 and during the years immediately following and have produced lasts showing a tendency toward more crooked lasts shortly after 1895, the last Defendants'

Exhibit No. 131 illustrating the nearly straight lasts in use prior to 1895, and the last Defendant's Exhibit No. 135 showing a last used from 1899 to 1901, which illustrates the tendency toward more crooked lasts. After 1900 the development of the industry was steadily toward still more crooked lasts. A step in this development is represented by a standard last of 1903, which I now produce.

[*Last of 1903 is introduced in evidence, and marked "Defendants' Exhibit 136".*]

[*Answer to Int. 77 continued:*]

I have placed upon the bottom of this 1903 last a straight line connecting the middle of the toe and the middle of the heel, and also lines which bisect the toe and heel respectively. These lines indicate the crookedness of this last. I also produce a last such as was used in 1905, and I have also marked upon the bottom of this last a line which connects the middle of the toe and the middle of the heel, and also lines which bisect the toe and the heel respectively. These lines indicate clearly the development of the industry toward crooked lasts.

[*Last of 1905 is introduced in evidence, and marked "Defendants' Exhibit 137".*]

*Model illustrating operation of Chase lasting machine is here introduced in evidence, and marked "Defendants' Exhibit 138".*]

[*Answer to Int. 77 continued:*]

The model which I have produced, Defendants' Exhibit 138, will illustrate roughly the difficulties encountered in the lasting of a shoe made upon the last of Defendants' Exhibit 137, on the Chase lasting machine. I should state that of course this model Defendants' Exhibit 138 does not reproduce the elaborate lasting mechanism of the Chase machine. It is intended to illustrate only the action of the toe and heel wipers, but I believe that it correctly represents the difficulties to which I shall refer and in the explanation of which I shall use the model.

I produce a metal pattern for right shoe which is of the same contour as the bottom of the last Defendants' Exhibit No. 137.

[*Metal pattern of right shoe on last of Defendants' Exhibit 137 is introduced in evidence, and marked "Defendants' Exhibit 139".*]

[*Answer to Int. 77 continued:*]

I also produce a metal pattern for a left shoe which is of the same contour as the bottom of the last of Defendants' Exhibit 137.

[*Metal pattern of left shoe on last of Defendants' Exhibit 137 is introduced in evidence, and marked "Defendants' Exhibit 140".*]

[*Answer to Int. 77 continued:*]

On each of these patterns I have placed a rib which represents the rib of an insole, so that for the purpose of demonstrating the models these patterns may be regarded as insoles. In manipulating the model which I introduced, Defendants' Exhibit 138, I place the heel end of the pattern in the recess which illustrates roughly the heel-end lasting mechanism. I then move toward the toe end of the pattern the metal parts of the toe end which illustrate roughly the toe-lasting mechanism. It will be observed that in moving toward the insole the parts of the model which correspond to the wipers of a lasting machine the wiper on the outside of the pattern engages the rib which represents the rib of the insole and stops further movement of the wipers before the wiper on the inside of the pattern engages the channel rib; and after engagement of the wiper on the outside, the wiper on the inside can move no farther and occupies a position at a substantial distance away from the adjacent rib.

It is obvious that in a lasting machine operating in this manner it would be difficult to force the upper materials on the inside of the toe up against the channel rib, as it is important that they should be forced in order that the welt may be properly laid in the angle between the feather edge of the sole, that is, the portion of the sole outside of the rib, and the rib. By way of anticipating demonstration of a model which I shall produce illustrating the operation of the No. 5 lasting machine, the present commercial bed lasting machine of the United Company, I will call attention to the fact that the wipers in this model Defendants' Exhibit No. 138 move in a direction which coincides with the median line of the model, which would be the median line of a machine. This

median line is indicated by broken lines cut in the pattern. The fact that the wipers move on the median line of the machine explains the failure of the inside wiper to operate properly. It will be observed that as the wipers are moved toward the pattern the acting edge of the inside wiper moves in a direction which is not far from parallel with the rib on the pattern.

#### LASTING MACHINE: No. 5, U. S. M. C.

Soon after the organization of the United Shoe Machinery Company, Mr. Brock, one of the company's lasting machine inventors, conceived that in order to overcome the difficulties which I have explained a bed lasting machine ought to be organized in such a manner that the wipers at the toe should, in their operative movement, move toward the insole rib in a line coinciding with a line bisecting the forepart of the shoe, and that if a machine were so organized the toe-lasting mechanism would operate alike on both sides of the toe. Mr. Brock further conceived that corresponding advantages would be obtained if the heel-lasting mechanism, including the wipers and heel bands, were made to operate in a direction which should be likewise coincident with a line bisecting the heel end of the shoe, and he also conceived that the accomplishment of these desirable results at both the toe and the heel could be secured by arranging the toe and heel mechanisms so that they would be relatively movable about a pivot located approximately at the point where the line bisecting the toe intersects the line bisecting the heel.

I now produce a model which illustrates this characteristic mode of operation of the new machine which was developed by Mr. Brock, and which, in its commercial form, became known as the "No. 5 Lasting Machine", the official name of which is "Lasting Machine No. 5, U. S. M. C."

[*Model illustrating operation of United Company's present commercial bed lasting machine No. 5 is introduced in evidence, and marked "Defendants' Exhibit 141".*]

[*Answer to Int. 77 continued:*]

This model, like that which I have produced illustrating the

operation of the Chase machine, is not intended to illustrate the elaborate lasting mechanism of the No. 5 lasting machine, but only to show the manner of operation of the heel and toe wipers. While the wiper plates of this model may be reversed, it happens now to be adjusted for a right shoe, and I shall therefore use Defendants' Exhibit No. 139, pattern of the last of Defendants' Exhibit 137, showing the 1905 last, in demonstrating the model, this being the same pattern which I used in demonstrating the model of the Chase lasting machine.

In illustrating with this model the operation of the No. 5 lasting machine I place the heel end of the pattern in the recess representing roughly the heel-lasting mechanism; then swing the heel-lasting mechanism until the toe is brought into proper relation to the toe-lasting mechanism, after which I move the toe-lasting mechanism into operative position. In moving the wipers forward it will be noted that they move on the line scratched on the pattern which bisects the toe end of the pattern; that the wipers move alike in the same manner on each side toward the rib on the pattern, and that at the extreme forward position of the wipers they are in substantial engagement with the rib on both sides. This construction in the commercial machine insures that the upper materials shall be crowded properly into the angle between the rib and the feather edge on both sides of the toe, on the inside of the shoe in the same manner and as well as on the outside.

Referring now to the lasting of the heel end of the shoe, and placing the pattern of Defendants' Exhibit 139 again in the model Defendants' Exhibit 138, it will be observed that when the wipers at the heel end are moved toward the last the wiper on the outside of the pattern advances over the edge of the pattern well toward the middle of the heel before the forward end of the wiper on the inside has reached the pattern at all. This difficulty was overcome in the commercial Chase lasting machine to a considerable extent by making the wipers in rights and lefts, but even that did not secure their proper operation, owing to the fact that their movement is on the median line of the machine indicated by broken lines on the pattern, and not, as it should be, to secure uniform

operation for both sides of the heel, on the median line of the heel of the last.

Again, inserting the pattern of Defendants' Exhibit 139 in the model Defendants' Exhibit 141 illustrating the operation of the No. 5 lasting machine and moving the heel-lasting plates toward the shoe, it will be observed that these move in the median line of the heel end of the last and operate just alike on both sides of the heel.

The improved heel-lasting mechanism embodied in the No. 5 lasting machine and illustrated roughly in the model Defendants' Exhibit No. 141 was of great advantage in lasting the heel ends of crooked lasts. In the machine the heel-lasting mechanism includes a heel band which, as I have explained in discussing the Chase lasting machine, is the means which crowds the upper materials against the sides of the last. It was extremely difficult in the use of the Chase machine to crowd upper materials, including the stiff counter, properly into engagement with the side of the last on the inside of the shoe, as the prevailing style of lasts which have been used since soon after 1900 are so shaped in the region just forward of the heel that at least as much pressure must be exerted upon the upper materials in that region as upon the upper materials at the corresponding point on the outside of the last. In the operation of the Chase machine the heel band in operating upon a last, such as is shown in Defendants' Exhibit 137, will engage the outside of the last just forward of the heel and come to rest before the end of the heel band on the opposite side, that is, the inside, has reached the last, and in fact when it is at some distance from the last.

The No. 5 lasting machine as first put out was constructed as shown in the drawings of patent No. 1,018,477, February 27, 1912, Brock (application filed October 26, 1907).

The distinguishing characteristics of the organization of this machine which I have been discussing are set forth in many claims of this patent, of which a typical claim is the first: —

"1. A machine for use in lasting shoes and boots, comprising lasting devices for acting upon opposite ends of the last, constructed and arranged for relative movement about a center approxi-

mately at the intersection of the median line of the heel part and the median line of the forepart of the last."

Nearly all of the one hundred and sixteen claims of this patent No. 1,018,477 define mechanisms which are embodied in the commercial No. 5 lasting machine which was first put out for commercial use in January, 1908, being known officially as "Lasting Machine No. 5, U. S. M. C."

The claims of patent No. 1,066,374, July 1, 1913, Brock (original application filed October 26, 1907), define the general organization of the No. 5 lasting machine in terms of the means for supporting the last. Most of the nineteen claims of this patent define the organization of the No. 5 lasting machine, and a typical claim is the first : —

" 1. In a machine of the class described, the combination with a support for one end of a last, of a support for the other end of the last, constructed and arranged for movement laterally about a center located approximately at the point of intersection of the median lines of the forepart and the heel part of the last."

Experimental work by other inventors which constitutes steps toward the invention finally developed in commercial form by Mr. Brock is illustrated and defined in the claims of patents No. 1,017,124, February 13, 1912, Winkley and Alley (application filed April 29, 1896), and No. 1,018,025, February 20, 1912, Winkley and Alley (application filed July 22, 1896).

Many of the claims of these two patents define in broad terms inventions embodied in the No. 5 lasting machine.

A typical claim of patent No. 1,017,124 is the nineteenth : —

" 19. The combination with toe lasting mechanism, of a toe rest and a heel support arranged for lateral curvilinear adjustment relatively to cause the median line of the foreparts of lasts having different degrees of swing to coincide with the median line of the machine."

A typical claim of patent No. 1,018,025 is the twenty-seventh : —

" 27. A lasting machine, comprising heel lasting mechanism including a heel embracing band, and means, independent of the shoe, constructed and arranged for effecting a lateral adjustment of the band into different positions to cause the band to act uni-

formly upon the two sides of the heel of a right or left shoe in the direction of the median line of the heel part."

The present commercial organization of the heel-band mechanism which was adopted in March, 1909, and constituted a distinct improvement in the machine, rendered the heel band self-adaptable to variations in the contours of the side faces at the heel end of the last.

The utility of mechanism which will shape itself to the heel ends of modern lasts will be obvious upon inspection of the heel end of a last which I now produce, which was used in 1907 and 1908 and which is typical of the unsymmetrical heel ends of modern lasts.

[*Last of 1907-1908, illustrating unsymmetrical heel ends of modern lasts, is introduced in evidence, and marked "Defendants' Exhibit 142".*]

[*Answer to Int. 77 continued:*]

This self-adapting heel mechanism is broadly defined in the claims of reissue patent No. 13,292, reissued September 19, 1911, of which the twelfth claim is typical:—

"12. In a lasting mechanism, the combination of an end embracing band, endwise movable bars acting on the band at opposite sides of the machine, an actuator, and an equalizing slide movable transversely of the machine."

Mr. Brock's improvements over the Snow invention are defined in the claims of patent No. 1,002,818, September 12, 1911, Brock. A typical claim of this patent is claim 30:—

"30. An end lasting mechanism having, in combination, an end embracing band, means for advancing the band ends longitudinally of the shoe and additional means movable transversely of the shoe and having its position controlled automatically by the work to effect equal band end closing pressure against the two sides of an unsymmetrical shoe."

All but one of the thirty-four claims of this patent No. 1,002,818 define mechanisms which are embodied in the commercial No. 5 lasting machine. This same mechanism which is disclosed in patent No. 1,002,818 embodies the subjects-matter of a number of claims in patent No. 958,280, May 17, 1910, Plant, of which a typical claim is the fiftieth:—

"50. In a lasting machine, shoe supporting means, end wipers, a pad, slide bars for supporting the end of the pad, means to advance said slide bars and means automatically conformable to the shape of the last to swing said slide bars toward or away from the pad."

A feature of this machine which contributes to the convenience of the operator, and therefore increases the capacity of the machine, and which has been in the machine since it was first put out for commercial use, is defined in the terms of reissue patent No. 13,505, reissued January 7, 1913, Glass, of which a typical claim is the thirteenth:—

"13. In a lasting machine, the combination with a heel lasting carriage adapted to move to and from a lasting position, of a jack post, means for retracting said jack post relatively to the carriage and for holding the same in its retracted position, and means automatically to release said jack post on the return of said carriage from its lasting position."

The claim which I have quoted is the same as claim 15 of the original patent No. 957,949, which was granted on May 17, 1910, to Glass' assignee, Thomas G. Plant.

This No. 5 lasting machine contains mechanisms defined in the claims of many other patents, the number of patents setting forth the organization of this machine being over twenty. As I have stated, the work of the No. 5 lasting machine was much superior to that done on the Chase lasting machine, and the great improvement in the quality of the work constituted the chief advantage of the No. 5 lasting machine over the Chase lasting machine. However, in addition to the superior quality of the work, the improvements which have been incorporated in the No. 5 lasting machine which enable it to do better work more rapidly, and which contribute to the convenience of the operator in using the machine, have given this No. 5 lasting machine an increased capacity of more than fifteen per cent over the capacity of the Chase lasting machine.

After manufacturers became acquainted with this No. 5 lasting machine the company was overwhelmed with orders. In February, 1911, the company was over 400 machines behind in its orders for No. 5 lasting machines, although it was building and shipping the

machines as fast as the facilities of its manufacturing plant would admit. For example, in April, 1911, the company shipped 208 machines. At no time since the machine was introduced has the company been able to catch up with its orders, and even as late as August, 1913, which is the date of the last report I have, the company was eighty-two machines behind in filling its orders. On that date, 4204 of these No. 5 lasting machines had been shipped. On December 1, 1911, over 3000 of these machines were in use in shoe factories.

From the beginning the No. 5 lasting machine has been adapted for lasting either men's or women's welt shoes. It has superseded the Ideal lasting machine as well as the Chase lasting machine, and it is now the standard commercial bed lasting machine supplied to manufacturers by the United Shoe Machinery Company.

At the present time the No. 5 lasting machine embodies mechanisms set forth in the claims of the following patents:—

No. 552,834, January 7, 1896, Grandy.

No. 569,231, October 13, 1896, Ray.

No. 571,429, November 17, 1896, Chase.

No. 588,568, August 24, 1897, Grandy.

No. 601,934, April 5, 1898, Brock.

Reissue No. 13,505, January 7, 1913, Glass (original patent 957,949, May 17, 1910).

No. 958,280, May 17, 1910, Plant.

No. 1,002,818, September 12, 1911, Brock (original application October 16, 1909).

Reissue No. 13,292, September 19, 1911, Snow.

No. 1,004,659, October 3, 1911, Keyes (application filed January 22, 1910).

No. 1,017,124, February 13, 1912, Winkley and Alley (application filed April 29, 1896).

No. 1,018,025, February 20, 1912, Winkley and Alley (application filed July 22, 1896).

No. 1,018,477, February 27, 1912, Brock (application filed October 26, 1907).

The above Letters Patent are all owned by the United Shoe

Machinery Company. This machine was put out by the United Shoe Machinery Company through its lasting department.

Mr. WEBSTER. Counsel for both parties having been temporarily called out for conference with the court, it is hereby stipulated that all evidence to which the petitioner might have objected at the time it was offered may be objected to now with the same force and effect as if objection was entered at the time the same was offered or being presented. And in pursuance of such stipulation, counsel for petitioner asks that objection be noted to the introduction of any patents and to the introduction of any testimony with reference to any patent or structure of any patent not issued before, or the title of which was not procured before, the filing of the petition herein.

*Int.* 78. You have referred to the McKay-Copeland lasting machine, the Ideal lasting machine and also to the hand method lasting machine. State as briefly as possible the history of the development of each of these machines, giving the Letters Patent under which the same were manufactured from time to time.

Mr. WEBSTER. In order to save interjecting objection during the taking of the testimony of the witness, petitioner asks that it be noted that the petitioner objects to evidence relating to patents and structures shown in patents, and to the introduction of patents issued or procured, after the date of the filing of the petition herein, on the ground that the same is inadmissible, incompetent, and as not affecting any of the issues involved in this case.

#### LASTING MACHINE: MCKAY & COPELAND.

*Ans.* Referring first to the McKay-Copeland lasting machine, that, like the Chase lasting machine, was of the bed type, that is, it comprised means for supporting the last at the heel and at the toe with a toe clasp and wipers at the toe arranged to last the upper around the toe, and a heel band and wipers at the heel arranged to last the heel portion of the shoe. Prior to 1899 and ever since the machine was and has been used exclusively on the heaviest kinds of shoes, that is, shoes having their soles attached with pegs, standard screw wire or nails.

I produce a sample of a shoe lasted on a McKay-Copeland lasting machine, which is a fair illustration of the quality of the work for which that machine is used, and for which alone it is adapted for use.

[*Shoe lasted on McKay-Copeland lasting machine is introduced in evidence, and marked "Defendants' Exhibit 143".*]

[*Answer to Int. 78 continued:*]

The McKay & Copeland lasting machine is more than twice as heavy as either the Chase or the Ideal lasting machine and its organization, which especially adapts it for lasting very heavy shoes, is such that it could not possibly be used with commercial success for the lasting of the better grades of men's welt shoes for which the Chase lasting machine was the standard lasting machine in 1899, and much less could it be used for lasting women's welt shoes, practically all of which were, so far as they were lasted by machine, lasted on the Ideal lasting machine in 1899.

The patents which define mechanisms embodied in the McKay & Copeland lasting machine in February, 1899, were as follows:—

No. 548,671, October 29, 1895, Streckler.

No. 548,862, October 29, 1895, Brock.

No. 601,933, April 5, 1898, Brock.

No. 601,935, April 5, 1898, Brock.

No. 1,030,564, June 25, 1912, Brock (application filed July 19, 1898).

The McKay & Copeland lasting machine, or a machine known by that name, was put out for many years prior to February, 1899. In 1895 it had, like the Chase lasting machine, undergone a thorough reorganization to adapt the machine to meet the radically changed conditions caused by the changes which were made in lasts about 1895 and which constituted the beginning of the development in lasts which resulted in the modern lasts used exclusively for the past ten or twelve years.

To adapt the McKay & Copeland machine for lasting the right and left shoes on crooked lasts, both the heel mechanism and the toe mechanism of the machine were entirely reorganized. Referring, first, to the new toe-lasting head which was adopted in the

reorganized machine, experimental work in its development is represented by patent No. 548,671, October 29, 1895, Stirckler. The organization of the new toe-lasting head which was adopted in 1897 is set forth broadly in the eighth claim of the patent No. 548,671, which is as follows:—

“8. In a machine for lasting boots or shoes, wiper plates made adjustable about a centre located in a line drawn centrally from the extremity of the toe backward along the sole to thus place the edges of the said plates at like distances from the edges of the toe of the last whether a right or left, and means to move the said wiper plates forward to act substantially simultaneously and uniformly on the upper to wipe the same over the last, substantially as described.”

The commercial construction of the new toe-lasting head as it was adopted in 1897 is shown in patent No. 601,933, April 5, 1898. All of the thirteen claims of this patent set forth features of the construction of the machine and of these claims the third is typical:—

“3. A lasting machine for use in lasting boots and shoes, containing a support for the last, an end lasting mechanism, constructed and arranged to permit relative and automatic movement of said last, an end lasting mechanism to enable the lever to act in a direction corresponding to the direction in which the end of the last faces, substantially as described.”

[*Adjourned to 10 a. m., Friday, October 10, 1913.*]

BOSTON, MASS., October 10, 1913.

[*Answer to Int. 78 continued:*]

This new toe-lasting organization as shown in this patent No. 601,933, and as defined by its claims and different claims of the two earlier patents to which I have referred, represented so important an improvement in the machine that within two years after its adoption, and prior to February, 1899, practically all manufacturers who were using the old type of McKay & Copeland lasting machine had purchased from the Consolidated & McKay Lasting Machine Company, the company which put out the McKay & Copeland lasting machine, new toe-lasting heads at a cost of \$150 each, and had had those new heads applied to their machines.

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Simultaneously with the development of this new toe-lasting organization, Mr. Brock, the inventor who was at work improving his machine, was experimenting on an improved heel-lasting organization to adapt the machine for lasting properly the heel ends of right and left shoes made on crooked lasts. This heel-lasting organization as commercially adopted was constructed as shown in the drawings and set forth in the claims of patent No. 1,030,564, June 25, 1912, Brock, granted on an application filed July 19, 1898. The inventions defined by all of the seventy-one claims of this patent have, since their adoption in 1899, always been embodied in this machine. Typical claims are the following:—

"36. In a lasting machine, end lasting devices automatically adjustable to meet the right and left swing of lasts, and means co-operating with the side of a last to determine such automatic adjustment of said lasting devices, said means being constructed and arranged for automatically varying the right and left adjustment of said lasting devices according to the peripheral variation between the bottom of the last and the body section thereof above the bottom, for the purpose specified."

"46. In a machine of the class described, a clasp to embrace the end of the last, and means to sustain the free ends of said clasp whereby as the clasp is closed on the last its ends are compelled to roll on the sustaining means and adapt themselves to the configuration or inclined sides of the last."

"65. A lasting machine having, in combination, a flexible end lasting pad conformable to the end of a shoe, pad presenting means, and wipers, and additional means for simultaneously moving the end wipers and lasting pad for lasting the upper."

The experimental work on this heel-lasting head began in 1895 and one of the experimental constructions constituting a step in its development is illustrated in patent No. 601,935. The commercial construction embodies an important improvement set forth in claim 3 of this patent, which is as follows:—

"13. In a lasting machine, the combination with the swinging wipers and actuating means to open and close the same, of positioning means co-operating with the last to swing the said wipers, either of them into starting position prior to movement of the same by said actuating means, substantially as described."

This reorganized heel-lasting head was, like the toe-lasting head,

received with great favor by shoe manufacturers and prior to February, 1899, practically all manufacturers had voluntarily had these new heel-lasting heads applied to their old machines, paying \$150 each for the heads which they obtained from the Consolidated & McKay Lasting Machine Company.

The importance of the improved toe and heel lasting organizations which constituted the improvements of the patents which I have been discussing, may be judged from the fact that prior to 1899 practically all manufacturers who were using the McKay & Copeland lasting machines had had their machines substantially rebuilt by the substitution of the new toe and heel lasting heads, for which they had paid \$300 for each machine to the Consolidated & McKay Lasting Machine Company.

The other important improvements which were made for, and adopted in, this machine had to do with the side-lasting mechanism of that machine. The McKay & Copeland machine was in 1899, and still is, provided with side-lasting straps which wrap around the shoe and are operated to stretch the upper over the ball and shank of the last and to carry the edges of the upper in those portions of the shoe over the edge of the last into lasted position. In lasting shoes on modern lasts, which as I have fully explained were, each year after 1895, becoming more and more crooked, it was found that the lasting straps of the old machine would not operate properly on the shanks and balls of shoes made on those crooked lasts. In 1901 there was adopted new side lasting mechanism by which these side-lasting straps were enabled to adapt themselves properly to the rights and lefts of crooked lasts. This improvement is shown in its commercial form in patent No. 823,664, June 19, 1906, Brock (application filed June 13, 1903). The improvements defined in all of the eighteen claims of this patent have, since 1901, been incorporated in the commercial machine and the majority of manufacturers using the machines which they had prior to the adoption of this improvement have had their machines equipped with the mechanisms shown and set forth in the claims of that patent No. 823,664. Claim 1 is typical:—

“1. In a machine of the class described, straps for encircling the

last and folding the edges of the upper over the last upon its opposite sides, in combination with means for automatically causing the straps to act uniformly on the shoe at the two sides of the last."

This machine is still being put out by the United Shoe Machinery Company through its lasting department for the lasting of very heavy shoes such as the shoe of Defendants' Exhibit 143. It is never used on medium or high grade shoes. The present commercial machine is constructed as set forth in the claims of the following patents:—

- No. 601,933, April 5, 1898, Brock.
- No. 601,935, April 5, 1898, Brock.
- No. 823,664, June 19, 1906, Brock.
- No. 1,030,564, June 25, 1912, Brock (application filed July 19, 1898).

#### LASTING MACHINE: IDEAL.

In addition to the Chase lasting machine and the McKay & Copeland lasting machine which I have discussed in my previous testimony, there was being put out in February, 1899, another type of bed-lasting machine known as the "Ideal" lasting machine. This machine was first put out for commercial use in May, 1895. It was especially designed for the lasting of women's welt shoes and in February, 1899, substantially all women's welt shoes which were lasted by machine were being lasted upon the Ideal lasting machine.

The commercial Ideal lasting machine as it was being put out in February, 1899, was constructed almost identically as shown in patent No. 552,834, January 7, 1896, Grandy. Two important features of the organization of the machine are defined in the claims of this patent No. 552,834. One of these features was the organization of the toe-lasting mechanism, which provided for lateral tipping of the wipers to adapt them to the plane of the bottom of the last at the toe and permitted the location of the axis upon which they turn substantially in the plane of the last bottom. This organization permitted the adjustment of the plane in which the wipers moved to accord with the plane of the bottom of the last at the toe, without changing the general relative position of

the wipers and the last bottoms at the toe. A typical claim of patent No. 552,834 directed to this improvement is the first:—

“1. In a lasting machine head, the combination of a base longitudinally pivoted, and adjustable, a sleeve supporting toe lasting mechanism mounted to revolve transversely thereon, lasting mechanism centrally mounted upon said sleeve, and worm and gear mechanism to revolve and hold said sleeve substantially as shown and described.”

The importance of the improvement defined in the claim which I have just quoted may be judged from the fact that this organization was incorporated and has always been used in the No. 5 lasting machine and it was also used in the Plant lasting machine.

Another important improvement which was incorporated in the Ideal lasting machine as it was put out in February, 1899, is set forth in the seventh claim of this patent No. 552,834, as follows:—

“7. In a lasting machine, the combination with the heel supporting band thereof, of supporting and operating slide bars, bell crank levers mounted thereon, carrying the heel supporting band substantially as described, inclines on said slide bars which act against the outer sides of the guide grooves and maintain the angular position of said bell crank levers for the different variations of shape and size of heel, substantially as shown and described.”

The organization defined in this claim 7 was intended and adapted to enable the machine to last properly the heel ends of the more crooked lasts which were beginning to be used at that time when the Ideal lasting machine was first put out for commercial use. This organization enabled the machine to last with commercial success the heel ends of shoes made on the lasts which were being used in 1895 and which incorporated the changes which constituted the beginning of the development of modern lasts as used during the past twelve or fifteen years.

This heel end lasting mechanism of the Ideal lasting machine was set forth in broader terms in the first claim of patent No. 558,043, April 14, 1896, Copeland, Crisp, Grandy and Avery (application filed May 23, 1892).

This patent, although granted subsequently to patent No. 552,834, describes an improvement which was made before the improve-

ment of No. 552,834. Claim 1 of patent No. 558,043 is as follows:—

“1. In a lasting machine head of the class described, the combination of the band L, the slide bars  $g^1$ , the equalizing bar A, the spring connections  $h^2$ , and suitable connecting and operating mechanism, substantially as shown and described.”

As used in 1899, the Ideal lasting machine also embodied the toe rest construction defined broadly in claim 26 of patent No. 571,429, November 17, 1896, Chase, which is as follows:—

“26. In a lasting machine, the combination of an end lasting mechanism with a toe rest which moves with the shoe in the direction of the length thereof by contact therewith, substantially as and for the purpose set forth.”

The specific construction of the toe-rest mechanism of the Ideal lasting machine which adapted it particularly for women's welt shoes, for which, as I have explained, the machine was especially designed, is defined in claim 8 of patent No. 521,954, June 26, 1894, Grandy, which is as follows:—

“8. In a lasting machine, a toe rest or support provided with a longitudinal reciprocating contacting face, substantially as shown and described and for the purpose set forth.”

The toe-rest mechanism as defined in the claim just quoted was of advantage in the machine because it prevented scarring of patent leather shoes, and the discoloring of russet shoes, by relative movement of the toe rest and the shoe. The improvement was of particular utility, also, in a machine which operated in the manner characteristic of the Ideal lasting machine because it prevented the formation of a fulness in the upper, back of the toe.

In addition to the eighth claim of patent No. 521,954 which has been quoted, that patent contained a number of other claims setting forth other features of the commercial Ideal lasting machine.

This machine, like the Chase lasting machine, was superseded in January, 1898, by the machine officially known as the “Lasting Machine No. 5, U. S. M. C.” The Ideal machine, like the Chase machine, was not adapted for satisfactory work in lasting shoes made upon modern lasts such as have been used in the past eight

or ten years, the development of which into the crooked lasts so generally used today took place gradually between about 1895 and 1905. The explanation which I have made my previous testimony of the defects of the Chase lasting machine in the lasting of shoes on present day lasts, with the assistance of a model showing operation of that machine and of a pattern of the bottom of a crooked last, applies equally well to the Ideal lasting machine. After manufacturers were able to get the No. 5 lasting machine there was no demand at all for Ideal lasting machines.

#### HAND-METHOD TYPE OF LASTING MACHINE.

At the beginning of my testimony in regard to the Chase lasting machine I explained in some detail the general differences between the bed type of lasting machine and the hand-method type of lasting machine. As I stated there, in the hand-method type of lasting machine the upper is worked over the last and automatically secured in lasted position by a step-by-step operation, the machine operating successively upon different portions of the shoe. The Consolidated hand method lasting machine which was being put out about February, 1899, was of this hand-method type. Generally speaking, the machine comprises grippers, wipers and tack mechanism, all operating automatically to grip the upper, wipe it over the bottom of the insole, and tack it in position. The machine got its name from the fact that its automatic operation is approximately the same as that of the hand laster. The grippers of this machine are organized to plait the upper around the toe, that is, to fold it, as is necessary to take care of the fulness of the upper around the curved toe and as is always done by the hand workman with his hand pincers in lasting around the toe.

#### LASTING MACHINE : CONSOLIDATED HAND METHOD (MCKAY).

The hand method lasting machine was the standard machine for lasting McKay sewed shoes, both men's and women's, in February, 1899. A large number of the machines were in use, and substantially all McKay sewed shoes which were lasted by machine in 1899 were being lasted upon the hand method lasting machine.

This was because the hand method machine had a capacity more than twice the capacity of any commercial lasting machine of the bed type, and the McKay sewed shoe manufacturers could not afford to use, and did not use, the slower machines of the bed type.

The commercial hand method lasting machine as put out just prior to February, 1899, was constructed substantially as shown in patent No. 584,744, June 15, 1897, Ladd and McFeely, except that the machine was not provided with some of the features of the organization of the machine shown in that patent which were particularly designed for adapting the hand method lasting machine for welt work. Prior to the adoption on the machine in 1898 of the inventions defined in the claims of this patent 584,744, and of other patents to which I shall refer later, the machine had been successful only on the cheaper grades of McKay shoes. Before that time the machine had been built substantially as shown in patent No. 423,922, March 25, 1890, Gooding and Ladd, although the machine shown in the patent No. 423,922 had been substantially improved by incorporating in it mechanisms defined in the claims of a number of patents of which the more important were No. 500,141, June 27, 1893, Ladd, and No. 510,973, December 19, 1893, Ladd.

The first of these patents relates to the means for controlling the plaiting mechanism of the machine, while the second of these patents defines in its claims an improvement in the mechanism for opening and closing the grippers, which, for the first time, rendered that mechanism entirely satisfactory in its operation, and which has been used continuously in substantially the same form to the present day.

A further step toward the commercial machine of 1899 was defined in the claims of patent No. 510,977, December 19, 1893, Ladd, which shows an improved mechanism for imparting the updraw movement to the grippers, and by patent No. 562,119, June 16, 1896, Carter, which defines in its claims the double-edge gauge adopted in 1895, comprising a thin gauge which would reach into the shank of the shoe, and a thick gauge such as is

needed to afford the necessary broad bearing for the work at the toe and the heel.

In the organization of the 1899 machine for slitting the upper around the toe of the heavier types of shoes, to facilitate the necessary plaiting or folding of the upper it is necessary at the toe to provide for the fulness which must be gathered in around the toe. Claim 1 of patent No. 564,931 is as follows:—

"1. In a lasting machine, in combination, upper working devices, a cutter mechanism including a plurality of cutter blades supported suitably for cutting the upper at opposite sides of the upper working devices, the blades being separately movable, and actuating appliances arranged for moving the cutter blades to cut the upper in different time relations, substantially as described."

The single claim of patent No. 584,742 defines the commercial construction used in the machine.

The machine shown in patent No. 423,922, modified and added to by the inventions of the later patents which have just been discussed, did acceptable work on the cheaper grades of McKay shoes, but, despite the effort to get this machine into factories making the better grades of McKay shoes, it was never successful on that class of work, and although tried many times in factories making the better grades of McKay shoes, it never stayed long in any of those factories, as the manufacturers would not use it on the better class of McKay work. Accordingly, as a result of experiments beginning in 1895 with the object of improving the quality of the work of the machine and extending its field to the better grades of McKay work, the machine was, about 1898, entirely reorganized by incorporating in it the improvements set forth in the claims of patent No. 584,774, June 15, 1897, Ladd and McFeely, to which I have previously referred as showing substantially the commercial machine of 1899 and also the improvements set forth in the claims of patent No. 597,321, January 11, 1898, Ladd.

The improvement set forth in the claims of patent No. 584,744, June 15, 1897, which was adopted in the hand method lasting machine for McKay sewed work, and which revolutionized that machine, was the organization which imparted to the grippers a

combined lateral and turning movement in the plaiting or folding movement of the grippers in lasting around the toe. Prior to this improvement the plaiting of the upper had been effected solely by a lateral or sidewise movement of the grippers. When, by embodying in the commercial machine, the improvement of patent No. 584,744, this plaiting movement was made a combined lateral and turning movement, the machine, for the first time, really approximated in its operation hand method lasting and justified its name. Typical claims of this patent No. 584,744 defining this improvement are 1 and 36, which are as follows:—

“1. A lasting machine having pincers for holding the upper, and means for pulling the upper held thereby, combined with means for moving the pincers forwardly over the last and laterally and turning the pincers, the pincers holding the upper continuously during said movements, substantially as described.”

“36. A lasting machine of the character indicated, having devices for holding the upper, and devices for stretching the upper held thereby, combined with means for turning and shifting the positions of said devices relatively to the last whereby the upper is twisted with relation to the edge of the last and carried forwardly and laterally over the same, and strained continuously during said operations, substantially as described.”

This organization defined in the foregoing claims was adopted in the commercial machine of 1899. At the same time there was incorporated in the machine the improvement defined in the eleven claims of patent No. 597,321, January 11, 1898, Ladd. The object of this invention was to adapt the machine for driving the tacks at an inclination to the plane of the insole so that as the tacks passed through the upper into the last they would tend to draw the upper material into the last they would tend to draw the upper material tighter. The disadvantages of driving the tack in a direction perpendicular to the facing of the insole was that just before the tack is driven the grippers let go and there is a tendency for the upper stock to slip back. Accordingly, a loose portion of upper was frequently found between the tack and the edge of the insole. When the tack was driven at an inclination the oblique movement of the tack overcame any such tendency of the upper to slip back. A typical claim of this patent No. 597,321 is the sixth:—

"6. A lasting machine, having a fastener inserting mechanism, and a shoe resting mechanism, said mechanisms being relatively disposed for resting the shoe for receiving the fastener with the plane of the fastener receiving part of the shoe inner sole oblique to the line of movement of the ingoing fastener, substantially as described."

The machine as reorganized by the inventions of patent No. 584,744 and No. 597,321 was found to be adapted for the lasting of all grades of McKay sewed shoes. The manufacturers of the machine, the Consolidated & McKay Lasting Machine Company, offered shoe manufacturers who were using machines of the old type an opportunity to exchange the heads of their old machines for reorganized heads embodying the improvements set forth in these patents, upon payment of fifty dollars for each new head, a sum which was considerably less than the cost of manufacturing the new head. I should, perhaps, explain that the head of the machine is the entire machine except the supporting column and the starting and stopping mechanism in the base of the machine. Practically all manufacturers who had old machines accepted this offer, so that in a short time nearly all machines in use embodied the improvements of these patents No. 584,744 and No. 597,321.

This hand method lasting machine for McKay sewed shoes has been substantially improved since February, 1899. The first improvement comprised means for changing the tension exerted in the updraw movement while the work progressed. It might be well to explain that the grippers of the machine are given this updraw movement to stretch the upper, and then an overdraw movement to lay the edge of the upper down upon the insole. This improvement is defined in all of the sixteen claims of patent No. 893,331, July 14, 1908, Ladd (application filed April 13, 1901). Claim 1 of this patent is typical:—

"1. A machine for working an upper over a last, comprising grippers for gripping the upper, actuating mechanism for the grippers including a yielding element, means for initially adjusting the actuating mechanism to determine the tension of said yielding element, and independent means under control of the workman for directly changing the tension of said yielding element to modify the pulling tension of the grippers."

The next change in the machine was a reorganization of the grippers which, as previously used, were shown in the patent No. 510,977, December 19, 1893, Ladd. The grippers mechanism of that patent was unsatisfactory because it involved inconvenience in getting the stock in between the two jaws of the grippers and did not hold the stock securely while the two jaws were pulling the upper. The important improvement over that construction, which was adopted during 1899, is accurately shown in the drawings and set forth in the claims of patent No. 1,005,234, October 10, 1911, Ladd and Stiggins (original application filed March 20, 1901).

The distinctive characteristic of the organization of the new grippers mechanism of this patent is that the movable jaw was operated in such a path that in each closing movement it reached out and gathered in the upper, as is well illustrated in Fig. 1 of the drawings of the patent. Of the thirty-eight claims of the patent, all of which define improvements embodied in the commercial grippers mechanism adopted late in 1899 and used ever since, a typical claim is the first :—

"1. In a machine for working an upper over a last, a grippers mechanism comprising a pair of jaws and means whereby one of said jaws may be moved relatively to the other to close the grippers, in combination with means for causing said movable jaw, in its movement to close the grippers, to reach out and gather in the upper."

Another important improvement made in the machine of 1899 was the change in its organization by which the machine was adapted to supply and drive either a long tack or a short tack as required by the particular operation of the stock being operated upon. I produce a McKay sewed shoe which has been lasted upon the hand method lasting machine.

[*McKay sewed shoe lasted on hand method lasting machine is introduced in evidence and marked "Defendants' Exhibit 144".*]

[*Ans. to Int. 78 continued:*]

On inspection of this shoe it will be seen that the upper materials lasted in at the toe and at the heel are thicker than the upper materials along the shank and ball of the shoe. This additional thickness is due at the toe to the edge of the box toe which constitutes

a part of the upper materials at the toe, and at the heel to the edge of the counter or stiffening piece. Prior to the improvement set forth in the claims of patent No. 999,233, August 1, 1911, Ladd and Stiggins (application filed March 20, 1901), the hand method lasting machine for McKay work had been so organized that it could drive but one length of tack. It is desirable, however, owing to the increased thickness of the upper materials of the toe and heel, that a longer tack be driven by the machine in lasting the toe and heel. On the other hand, it is undesirable to use a long tack in the shank and forepart, because in the use of a long tack there would be too long a point to clinch on the inside of the insole; the long clinched point would interfere with the operator of the McKay sewing machine in attaching the out-sole, since in the sewing operation the thread would frequently be abraded or broken by the long clinched points, and such extra long points on the inside of the shoe are also likely to cause discomfort to the wearer of the shoe because the points are liable to work up in the wear of the shoe and get into the foot of the wearer.

The difficulties to which I have referred were entirely overcome when the improvements of patent No. 999,233 above mentioned were incorporated in the machine. These improvements comprise providing the machine with mechanism for supplying tacks of different lengths, one length being that required at the heel and toe, and the other length being a shorter tack of just the right length for the forepart and shank, and connecting this tack-supplying mechanism with the edge-gauging mechanism which must be changed at the heel and at the toe, so that as the operator changed the edge-gauging mechanism he would be obliged at the same time, by the connections between the edge-gauging mechanism and the tack-delivering mechanism, to adjust the machine for delivering the right length of tack for the particular part of the shoe upon which he was operating. The operator was thus effectually prevented from using a tack of improper length for the part of the shoe which he was lasting. This improvement is set forth in all of the fifteen claims of patent 999,233 of which claims 7 and 8 are typical:

"7. In a machine of the class described, mechanism for supply-

ing fastenings of different kinds, a plurality of relatively movable rests, and means actuated by relative movement of said rests for causing said mechanism to stop supplying fastenings of one kind and supply fastenings of another kind.

"8. In a machine of the class described, a tack delivering mechanism arranged to deliver tacks of different sizes, a thin edge rest occupying a fixed position, a thick edge rest, means for moving said thick edge rest toward and from operative position, and means actuated by a movement of said thick rest for causing said tack delivering mechanism to stop delivering tacks of one size and deliver tacks of another size."

As I stated in explaining the construction of the 1899 hand method lasting machine, it was frequently desired, and often necessary, in lasting McKay sewed shoes made of heavier leathers, to slit the upper in lasting around the toe to permit the folded upper to lie down properly upon the insole. The slitting mechanism of the 1899 machine was designed for the old type of grippers organization in which the grippers were moved laterally, but did not have the combined lateral and turning movement which, when embodied in the machine in 1899, completely revolutionized the machine as I have explained.

Experimental work was begun in 1898 and continued until 1901 with a view to providing the modern machine, in which the grippers had a combined lateral and turning movement, with upper-slitting mechanism which would co-operate properly with that grippers organization.

The very satisfactory organization for this work which was adopted in 1901 is constructed substantially as shown, and as defined, in all of the fifty-two claims of patent No. 931,809, March 28, 1905, McFeely (application filed July 14, 1900). A characteristic of the commercial construction was that the cutter was operated first to engage the upper at a distance from the edge of the upper and then to form the slit by cutting toward and out of the edge of the upper. A typical claim of this patent No. 931,809 is the fortieth:—

"40. In a machine of the class described, the combination with pincers for pulling an upper over a last, and a cutting device, of

means for moving the cutting device in the direction of the pulling strain effected by the pincers to slit the upper."

The general organization of an upper slitting device with grippers which have the combined lateral and turning movements which, as the machine has been organized since 1899, is set forth in broad terms in many claims of patent No. 786,047, March 28, 1905, McFeely (application filed July 14, 1900), which patent shows a stage in the development of the organization which was commercially adopted and shown as I have explained in the Stiggins patent No. 931,809. A typical claim of patent 786,047 is the thirteenth:—

"In a machine for working an upper over a last, pincers for gripping the upper, a cutting device, means for actuating the cutting device to slit the upper, and mechanism for actuating the pincers to grip and stretch the upper and twist it with relation to the slit formed by the cutting device."

The hand method lasting machine for McKay work is the present standard commercial machine of the United Shoe Machinery Company for lasting McKay sewed shoes, and the machine is very extensively used; 4883 hand method lasting machines for McKay work were put out by the United Shoe Machinery Company between March 1, 1899, and March 1, 1913.

There is practically no demand for the bed type of lasting machine for McKay sewed shoes, because the hand method lasting machine for McKay work has practically twice the capacity of a bed lasting machine on that class of work. The machine is put out by the United Company through its lasting department. As it is now being put out it embodies the improvements shown and set forth in the claims of the following patents:—

- No. 584,742, June 15, 1897, Ladd.
- No. 584,744, June 15, 1897, Ladd and McFeely.
- No. 597,321, January 11, 1898, Ladd.
- No. 867,469, October 1, 1907, Bond.
- No. 893,331, July 14, 1908, Ladd.
- No. 931,809, August 24, 1909, Stiggins.
- No. 999,233, August 1, 1911, Ladd and Stiggins.
- No. 1,005,234, October 10, 1911, Ladd and Stiggins.

No. 1,014,940, January 16, 1912, Bond (application filed May 5, 1908).

**LASTING MACHINE: CONSOLIDATED HAND METHOD (WELT).**

In February, 1899, the hand method lasting machine was not commercially successful for lasting welt shoes, although experimental work had been going on for several years in the endeavor to adapt a machine for lasting welt shoes, and the stage in that experimental work is represented by some of the improvements which are shown in patent No. 584,744, June 15, 1897, Ladd and McFeely.

The lasting of welt shoes is a very different operation from the lasting of McKay shoes. As shown in Defendants' Exhibit 144, which is a McKay sewed shoe lasted upon the hand method lasting machine for McKay work, the insole of a McKay sewed shoe is flat, and in the lasting of such a shoe it is only necessary that the upper stock be worked properly over the edge of the last, laid down upon the flat insole, and tacked. The insole of a welt shoe, on the other hand, is formed with a channel lip or rib extending all the way around the shank, forepart and toe. The narrow strip between this lip or rib and the edge of the sole is known as the "feather edge". I produce a last having a welt insole tacked to it, which will serve to illustrate the problems which were encountered in the development of a hand method lasting machine properly organized for lasting welt shoes.

[*Last and welt insole attached is introduced in evidence, and marked "Defendants' Exhibit 145".*]

[*Answer to Int. 78 continued:*]

In this Exhibit 145 the feather edge is the extreme edge portion of the insole, and the channel lip which was formed by the insole channeling operation is turned back, as is required for the lasting and welt-sewing operations. In order that the shoe may be in proper condition for the welt-sewing operation, the upper must, in the lasting operation, be forced into the angle formed by the feather edge and the upturned lip, and must be secured in that position. The hand method lasting machine supplied for the last-

ing of McKay sewed shoes had no provision whatever for getting the upper into this angle between the feather edge and the lip, and for securing it in that position snugly against the lip. Not only was the hand method lasting machine for McKay work unsuited for the lasting of welt shoes satisfactorily, but in fact it could not possibly be used commercially for that work.

In the experimental work directed towards the development of a hand method lasting machine for welt work, a few experimental machines were built and tried out in shoe factories which incorporated improvements illustrated and set forth in the claims of patent No. 584,744. The important improvement of that patent, which consisted in the new toe-plaiting organization, comprising grippers having combined lateral and turning movements, has already been discussed in connection with the hand method lasting machine for McKay work. That improvement was also embodied in the experimental hand method machine for welt work, which was tried out before 1889, and in addition improvements especially designed for welt work, which are defined in the claims of that patent, were incorporated in the experimental welt machine. Typical claims setting forth these mechanisms are 16, 44 and 46, which are as follows:—

“16. A machine of the character indicated, having a plurality of separately movable work pressers, and supporting connections permitting movement to place a presser in position desired for bearing upon the overturned upper, combined with means whereby the presser may be placed in or removed from said position when required during the lasting process, substantially as described.”

“44. In a lasting machine, the combination of mechanism adapted for feeding and separately delivering different sized tacks and permitting movement whereby it is shifted from delivering one sized tacks to delivering another sized tacks, a tack driving mechanism adapted for driving the tacks to different planes whereby the driven tacks are left with their head ends at different altitudes relatively to the plane or surface penetrated by the body parts thereof, said mechanism permitting movement to change its operation from driving the tacks to one of said planes or altitudes, to the operation for driving tacks to another of said planes or altitudes, and a connection between the feeding and delivering mechanism and the driving mechanism by means of which the shifting of one effects a corresponding shifting of the other, substantially as described.”

"46. A lasting machine of the character indicated, having upper lasting appliances for lasting the upper over the last, combined with an auxiliary presser mechanism arranged for use in fulling or crimping the upper, substantially as described."

The importance of the improvement defined in claim 44 above quoted may be briefly explained in connection with a lasted woman's welt shoe which has been lasted on the hand method lasting machine for welt work as now supplied by the United Company, which I now produce.

[*Woman's welt shoe lasted on hand method lasting machine (welt) introduced in evidence, and marked "Defendants' Exhibit 146".*]

[*Answer to Int. 78 continued:*]

It will be observed that in this Exhibit 146 the tacks around the heel are "driven home", while the tacks around the shank and forepart are not fully driven and their heads are located above the stock. Tacks are always so driven in the lasting of welt shoes, because trade conditions require that all the lasting tacks around the shank and forepart of a welt shoe shall be removed at later steps in the manufacture of the shoe.

The improvements recited in the claims which I have quoted from patent No. 584,774 were embodied in the lasting machine for welt work when it was finally adopted for commercial use, and have been retained in the machine to the present day. This experimental welt lasting machine was also provided with the improvement of patent No. 597,321, January 11, 1898, Ladd. General advantages of the improvement of this patent were pointed out in my previous testimony regarding the hand method lasting machine for McKay work, and those general advantages are also secured by the improvement as embodied in the machine for welt work, and in addition further advantages which are peculiar to welt work. In the commercial welt lasting machine as put out after 1899, the tack-supplying and tack-driving organization drove the tack obliquely into the angle of union of the feather edge and channel lip, which I explained in discussing Exhibit No. 145. This is also illustrated in Fig. 12 of the drawings of patent No. 597,321. Many of the claims of this patent are directed to the organization for welt work, a typical claim being the second: —

"2. A lasting machine, having means for pressing the upper in the angle of union of the shoe inner sole and channeling lip thereof, combined with fastener inserting mechanism for securing the upper to the inner sole, said mechanism operating to insert the fastenings through the overturned upper in said angle of union and obliquely toward the middle of the shoe, each of the inserted fastenings being independent of others, substantially as described."

The experimental machine before 1899 and the commercial machine as adopted after that time embody improvements defined in the claims of patent No. 584,741, June 15, 1897, Ladd. Claim 13 is as follows:—

"13. A lasting machine of the character indicated, having in combination, a work presser having at its work bearing end an angular or corner formation for bending the overturned upper inwardly to the angle of juncture between the inner sole and vertical edge face of the welt lip thereof, substantially as described."

Several of these experimental hand method lasting machines were, as I have stated, being tried out in shoe factories before February, 1899, but they were not acceptable to shoe manufacturers and could not compete successfully with the lasting machine of the bed type, which was probably chiefly due to the fact that at about that time, in 1898, it became the general practice in lasting welt shoes on bed lasting machines to secure the toe portion of the upper in lasted position by a wire which was secured to a tack on one side of the toe, carried around the toe in such location as to hold the lasted upper in position in the angle of union between the feather edge and the channel lip, and secured to a tack on the opposite side of the toe. The upper, at the toe, is held in lasted position by such a wire in Defendants' Exhibit 146, showing a woman's welt shoe lasted on the present hand method lasting machine for welt work.

The use for such a wire was a substantial improvement in methods of lasting welt shoes because it did away with the driving of a large number of tacks around the toe, which was very objectionable, particularly in lasting shoes on the narrow-toed lasts, which were much in vogue at that time, as I have explained in my previous testimony. Such lasts are shown in Defendants' Exhibits Nos. 133 and 134.

The experimental hand method lasting machine for welt work

prior to February, 1899, not only was not provided with any mechanism for putting the wire around the toe, but its organization would not permit the use of such a wire. The only way that the hand method machine could last narrow-toed shoes then in use was by driving an excessive number of tacks around the toe, which alone was enough to condemn the machine for satisfactory commercial use.

Immediately after the organization of the United Shoe Machinery Company experimental work was undertaken with a view to produce an organization which would enable the hand method lasting machine to secure the uppers of welt shoes around the toe by means of wire. The organization first commercially used, and which was adopted in 1900, is shown in patent No. 696,740, April 1, 1902, Ladd, and is defined in eleven of the claims of that patent. Typical claims of this patent are the first and eighth:—

"1. A machine for working an upper over a last, comprising mechanism for presenting individual fastenings, mechanism for supplying continuous fastening material, and means for rendering either of said mechanisms operative or inoperative."

"8. A machine for working an upper over a last, comprising means for inserting fastenings, means to suspend the insertion of said fastenings during a number of repeated operations of said machine and means for placing wire or a similarly continuous material in position for holding the parts of said upper which are manipulated by operations of said machine taking place during said suspension of the insertion of said fastenings."

This organization is also defined in all of the seven claims of patent No. 696,717, April 1, 1902, Cavanagh. The claims of this patent define in broad terms an organization of a hand method lasting machine adapting it for using wire in lasting toes of welt shoes. A typical claim is the first:—

"A machine comprising grippers and means for actuating them to work an upper over a last, combined with means for superimposing wire or a similarly continuous material on said upper over-worked by said grippers to secure the upper on the last."

The commercial success of the hand method lasting machine for welt work dates from the incorporation in it, in 1900, of the wire-

applying organization defined in the claims of the two patents last discussed.

While the organization shown in its commercial form in patent No. 696,740, April 1, 1902, did satisfactory work so far as concerned the getting of the wire into the proper position on the shoe, it was so constructed and operated that it interfered with the operation of the machine because it occasionally prevented proper positioning of the shoe at certain times in the progress of the work. It was also inconvenient for the operator to use because it required him to operate a second treadle in addition to the starting and stopping treadle upon which he had to rest one foot throughout the operation of the machine. In 1901 an improved wiring organization was adopted and superseded that shown in the Ladd patent 696,740. This new organization was constructed and operated substantially as shown in patent No. 946,620, January 18, 1910, Stiggins (application filed March 21, 1901), and in patent No. 1,027,510, May 28, 1912, Stiggins (original application filed March 21, 1901). This new organization also embodied improvements set forth in patent No. 944,116, December 21, 1909, Wade (application filed November 8, 1900), which patent shows in its drawings an experimental stage in the development of the new wire-applying organization.

Typical of the claims of this patent No. 944,116, setting forth improvements embodied in the commercial organization, are one and eight, as follows:—

“1. A machine for working an upper over a last, comprising overworking mechanism, and mechanism for superimposing wire or like continuous material in position for binding the overworked upper, said machine having provision for advancing the wire at each operation of the overworking mechanism.”

“8. A machine for working an upper over a last, comprising mechanism movable toward and from operative position for superimposing wire or like continuous material in position for binding the overworked upper, means to put said mechanism into operative position, and means to take up the wire automatically when said mechanism is inoperative position.”

The improvement set forth in the claims of which the first above quoted is typical was incorporated in the improved organization

shown in patent No. 946,620 and was used until that mechanism was again reorganized in 1906, as I shall shortly explain. The improvement set forth in the claims of patent No. 944,116, of which claim No. 8 is typical, was embodied in the reorganized wire-applying mechanism which was adopted in 1906.

The defect in the earlier organization of the wire-applying mechanism, which required the operator to use two treadles during the operation of the machine, was overcome by improvements defined in many of the claims of patent No. 946,620, January 18, 1910, Stiggins, of which a typical claim is the third:—

"3. In a machine for working an upper over a last, means for superimposing wire or like continuous material in position for binding the overworked upper, mechanism for retarding the advance movement of said wire, mechanism for starting and stopping the machine, and connections wherethrough said retarding mechanism may be controlled by the starting and stopping mechanism."

The objection to the earlier wire-applying organization, that it was in the way of the shoe during the last operation, was overcome in the organization, Stiggins patent No. 946,620, by the improvement defined in many claims of that patent, of which claim 16 is typical:—

"16. In a machine for working an upper over a last, means for superimposing wire or like continuous material in position for binding the overworked upper, said means including a wire supporting guide, and means for automatically shifting the position of said guide relatively to the plane of the shoe bottom when the wire placing mechanism is rendered inoperative."

The severing of the wire at the end of the operation upon each shoe was conveniently provided for in this organization by mechanism shown in patent 1,027,510, May 28, 1912, Stiggins (application originally filed March 21, 1901).

The wire-applying organization of the machine was again improved in 1906 by the organization defined in the claims of patent No. 1,005,929, October 17, 1911, Bond (application filed February 25, 1907). This new organization embodies all the best features which had been used in the prior constructions, and included

improvements contributing to the successful and convenient use of the machine in lasting the toe. That patent shows the wire-applying organization as now embodied in the hand method lasting machine for welt work.

In the foregoing review of the development of the hand method lasting machine for welt work, particular attention has been devoted to explaining the improvement which adapted the machine for welt work, and which distinguished the machine from the hand method lasting machine for McKay work. It should be understood, however, that many of the mechanisms which are embodied in the hand method lasting machine for McKay work, and which I explained in connection with that machine, are embodied in the machine as adapted for welt work.

The hand method lasting machine for welt work is put out by the United Shoe Machinery Company through its lasting department and as now organized embodies the mechanisms set forth in the claims of the following patents:—

- No. 584,741, June 15, 1897, Ladd.
- No. 584,744, June 15, 1897, Ladd and McFeely.
- No. 597,321, January 11, 1898, Ladd.
- No. 696,717, April 1, 1902, Cavanagh.
- No. 696,740, April 1, 1902, Ladd.
- No. 944,116, December 21, 1909, Wade.
- No. 946,620, January 18, 1910, Stiggins.
- No. 1,005,234, October 10, 1911, Ladd and Stiggins.
- No. 1,005,929, October 17, 1911, Bond.
- No. 1,027,510, May 28, 1912, Stiggins (original application filed March 21, 1901).

Up to March 1st, 1913, the end of the company's last fiscal year, 2,750 Consolidated hand method lasting machines for welt work were put out. There is a difference of opinion among shoe manufacturers as to the desirability of using the hand method machine or the bed type of lasting machine for welt shoes. Those manufacturers who believe that they can secure better lasting upon the bed type of lasting machine prefer, and are supplied with, lasting machine No. 5, U. S. M. C., the United Company's standard com-

mercial bed lasting machine, which was introduced in 1908. Other manufacturers who are satisfied with the quality of the work done on the hand method lasting machine for welt work prefer that machine because they can get twice the amount of work from it as from the bed type of lasting machine. Either type is supplied to the manufacturer by the United Company, according to his preference.

#### HAND METHOD LASTING MACHINES FOR TURN SHOES.

In February, 1899, there was no commercial lasting machine which was adapted for successful work in lasting either the toes or the heels of turn shoes. Neither the hand method lasting machine for welt work, nor the hand method lasting machine for McKay work was adapted for use in lasting turn shoes. The machine for McKay work was not adapted for that use, for reasons which were similar to the reasons which I have pointed out why that machine was not adapted for the lasting of welt shoes, and for other reasons due to the peculiar problems attending the lasting of turn shoes. The McKay machine may be disregarded in the discussion of the adaptability of the hand method type of lasting machine for the lasting of turn shoes.

As for the reasons why the hand method machine for welt work was not adapted for the lasting of turn shoes, perhaps the most important reason is that in lasting the forepart of a turn shoe by machine it is not practicable to use tacks. A turn shoe is unique in that it has but one sole. A turn sole is shown in Defendants' Exhibit 118. A turn shoe is lasted wrong side out, and during the lasting operation the grain side of the sole which is to form the tread face of the sole in the finished shoe is against the bottom of the last. In the lasting operation tacks must not be driven clear through the sole, as in that case they would pass through the grain face of the sole and when they were withdrawn would leave holes in the bottom of the sole. Attempts were made to use the hand method lasting machine for welt work with an organization which would not drive the tacks clear though the sole, but this proved to be impracticable, as the mechanism of the machine could not be

depended on to operate in this way and frequently drove a tack clear through the sole, and so defaced the grain inside.

Another explanation of the failure of the hand method lasting machine for welt work in lasting turn shoes was the lack, in that machine, of means for properly taking care of the feather edge of the turn sole during the lasting operation. In a welt shoe the feather edge of the insole is concealed in the finished shoe, but in a turn shoe the feather edge of the sole, that is, the extreme edge portion between the edge of the sole and the channel rib, is exposed in the finished shoe, and it is therefore important that that edge shall not be defaced or injured in the lasting operation. During the lasting operation this feather edge lies against the last at the extreme edge of the last, and, in fact, as turn shoes are usually made, it extends somewhat over the edge of the last. Accordingly, there is a constant tendency in the operation of the lasting machine to turn up the feather edge during the straining of the upper up over the edge of the last. This tendency to curl up the edge of the sole is aggravated by the fact that during the lasting operation the sole must be "in temper", that is, must be so thoroughly dampened by water that after the lasting operation, and after the last has been removed from the shoe, it can be turned right side out without danger of breaking the sole.

The hand method lasting machine was not, in February, 1899, organized so that it could last a turn shoe without constant danger of curling up the edge of the sole. This was fatal to its success on that work, as the needle of the turn sewing machine, the operation of which follows the lasting while the shoe is still wrong side out, and with the feather edge still inside of the shoe, would frequently strike the upturned edge of the sole and would mutilate it and sometimes spoil it, so that all the work on the shoe up to that time had to be undone and a new sole substituted.

#### LASTING MACHINE : CONSOLIDATED HAND METHOD (TURN TOE).

The first machine designed and adapted particularly for lasting the toes of turned shoes was produced and supplied to shoe manufacturers by the United Company in 1906. This machine was con-

structed substantially as shown in the drawings and as set forth in the claims of patent No. 1,009,054, November 21, 1911, DeMinico, granted on an application originally filed December 12, 1906, with the incorporation in the organization shown in that patent No. 1,009,054 of the mechanism illustrated in the drawings and set forth in the claims of patent No. 784,251, March 7, 1905, DeMinico.

In this machine no tacking mechanism whatever was employed, as the machine was organized to secure the upper in lasted position around the toe by means of wire, the wire-attaching organization being substantially the same as that employed on the hand method lasting machine for welt work, with an improvement which adapted that organization for the peculiar conditions of turn work.

The necessity of this change was that owing to the fact, as I have explained, it is not permissible to drive tacks clear through the turn sole, the tacks to which the upper-holding wire is secured do not hold the wire which secures the upper in lasted position with sufficient strength to permit of the use of the wire-severing mechanism of the welt machine organization, and after that wire-severing means had been tried on a few of the turn toe-lasting machines it was discarded as impracticable and there was substituted for it a wire-cutting mechanism which is operated by a limited movement of the starting and stopping treadle of the machine, which movement is not sufficient to start the machine. This arrangement, which was very convenient for the operator, is defined in many claims of patent No. 1,009,054, November 21, 1911, DeMinico, of which claim 14 is typical:—

"14. In a machine of the class described, a starting and stopping mechanism, a treadle, a connection between the said mechanism and the treadle, a cutting device, and a connection between the treadle and the cutting device, said parts being constructed and arranged to permit the treadle to be actuated for operating the cutting device without operating the starting and stopping mechanism."

Many turn shoes are made with plain toes, that is, without any tip, the tip being the small portion of upper stock which commonly forms the toe end of the upper in shoes as usually made.

Furthermore, these plain-toed turn shoes are also often made without toe boxes, the toe box being the stiff material usually

interposed between the lining and upper of a welt shoe to give permanent shape to the toe portion of the upper while it is being worn. In lasting this plain-toed shoe the stock would not stand as much pulling strain by the grippers as is ordinarily required in the operation of the machine. To adapt a turn toe-lasting machine to this class of work it was so organized that the operator could instantly adjust the machine to provide for a shorter pulling stroke. This mechanism was defined in many claims of patent No. 1,009,054, November 21, 1911, DeMinico, of which claim No. 1 is typical:—

“1. In a machine for working an upper over a last, the combination with grippers to seize and pull the upper and means for actuating them automatically to draw the upper inwardly over the edge of the last for laying it in position to be fastened, of means adapted to be adjusted for varying the position to which said actuating means can move the grippers inwardly over the last bottom.”

In the same class of work it is also frequently necessary, in addition to shortening the pulling movement of the grippers, to lighten the strain exerted by them in the combined sidewise and turning movement which they have in plaiting or folding the upper in lasting around the toe. This was provided for in the turn toe-lasting machine by providing means arranged for convenient manipulation by the operator for quickly varying this plaiting tension.

This improvement is also set forth in numerous claims of patent No. 1,009,054, of which a typical claim is the twenty-fourth.

“24. In a machine for working an upper over a last, the combination with grippers, of mechanism to actuate the grippers to plait the upper while lasting around the toe portion of the shoe, including a spring and means, arranged in position to be manipulated by the operator standing in working relation to the machine, by which the plaiting tension may be increased and diminished as the plaiting progresses.”

The problem of preventing the turning up of the extreme edge, that is, the “feather edge” of the sole, which was one of the most serious problems to be dealt with in organizing the hand method lasting machine for turn work, was solved by the mechanism illustrated in the drawings and set forth in the claims of patent No. 784,251, March 7, 1905, DeMinico.

No hand method lasting machine has been successfully used in

the lasting of the foreparts of turn shoes which was not provided with this improvement defined in the ten claims of this patent. The nature of the improvement is well indicated by claims 1 and 14, which are as follows:—

“ 1. In a lasting machine, the combination with means for working an upper over a last, of a downhold having a portion shaped to overlie the shoulder or rib of the sole of a shoe being lasted and a portion formed to bear upon the marginal portion of the sole outside said shoulder or rib and at one side of the said upper working means.”

“ 14. In a machine for lasting shoes, the combination with means for working an upper over a last, and a rest for engaging the sole to position the shoe, of a yielding downhold mounted on the rest and extending beyond the latter for engaging the feather edge of the sole to prevent displacement of the edge of the sole during the lasting operation.”

It has been attempted in the foregoing discussion of the hand method lasting machine for turn toes to refer in detail only to the improvements which adapted the hand method machine particularly for this work. It should be understood, however, that most of the features of the organization of the hand method lasting machine for welt work are also embodied in the machine when organized for lasting toes of turn shoes. On January 1, 1913, the standard commercial hand method lasting machine for lasting turn toes, put out by the United Company, embodied the mechanisms defined in the claims of the following patents:—

- No. 584,741, June 15, 1897, Ladd.
- No. 584,744, June 15, 1897, Ladd and McFeely.
- No. 696,717, April 1, 1902, Cavanagh.
- No. 696,740, April 1, 1902, Ladd.
- No. 784,251, March 7, 1905, DeMinico.
- No. 893,331, July 14, 1908, Ladd.
- No. 946,620, January 18, 1910, Stiggins.
- No. 1,005,234, October 10, 1911, Ladd and Stiggins.
- No. 1,009,054, November 21, 1911, DeMinico.

I produce a lasted turn shoe, the toe of which was lasted on this new turn toe lasting machine, the official name of which is “Lasting Machine, Consolidated Hand Method Turn Toe”.

[*Lasted turn shoe having toe lasted on hand method turn toe lasting machine is introduced in evidence, and marked "Defendants' Exhibit 147".*]

[*Answer to Int. 78 continued:*]

This machine is put out by the United Shoe Machinery Company through its lasting department.

**LASTING MACHINE : CONSOLIDATED HAND METHOD (TURN HEEL SEAT).**

Until 1906 the hand method lasting machine had not been adapted for lasting the heel ends of turn shoes. Turn shoes are made in two ways as regards the attachment of the heel end of the toe and the upper. Some turn shoes have the upper secured to the sole on the turn sewing machine all the way around the sole, including the heel seat, the heel seat being the heel end of the sole to which the heel is subsequently to be attached. Other turn shoes have the sole attached on the turn sewing machine only in the shank and in the forepart, leaving the heel seat of the sole unattached, to be secured subsequently in the operation known as "heel seat nailing". This class of turn shoes is illustrated in Defendants' Exhibit 147, in which the channeling on the sole indicates that the operation of the turn sewing machine is to stop at the heel seat. Such a shoe is also shown in the turn shoe which I now produce, which has had the upper secured to the sole on the turn sewing machine, and has been turned right side out.

[*Turn shoe having its heel seat lasted by lasting machine "turn heel seat" is introduced in evidence, and marked "Defendants' Exhibit 148".*]

[*Ans. to Int. 78 continued:*]

In the lasting of shoes which have their soles sewed in the shank and forepart, but not around the heel seat, it is the practice, after the shoe has been turned to insert a last on which the subsequent operations are to be performed, to place a "heel-seat piece" on the heel end of the last to form an anchor for the lasting tacks and then to last the upper over this heel-seat piece and secure the upper to it by means of tacks. The problem in doing this work by machine

was to organize a machine which could operate properly in the angle between the loose end of the sole and the upper. On inspecting Defendants' Exhibit 148, the difficulty of lasting in the portion of the upper adjacent to the seam and of tacking it in lasted position will be clear. Attempts had been made to use the hand method lasting machine, welt, in this operation of lasting heel seats of turn shoes, but it was not commercially successful for that work because it was not organized to operate in the small space between the sole and upper adjacent to the end of the seam. Accordingly a reorganized hand method lasting machine was produced for this special work and was first put out for commercial use in April, 1906. The machine did not reach its present commercial form until 1907, when the combined wiper and tack-locating means shown in the drawings and defined in the claims of patent No. 1,003,984, September 26, 1911, Clary (application filed December 13, 1907), was adopted. The mechanism of that Clary patent made this machine commercially successful. The organization is defined in all ten claims of that patent, typical claims of which are 1 and 2 :—

"1. In a machine of the class described, a horizontally moveable tack block having at its forward end a transverse driver passage towards which said block is tapered, the forward end of said tack block being rounded in two dimensions, and a yielding tack retaining pocket in line with said driver passage.

"2. In a machine of the class described, fastening, retaining and guiding means comprising a horizontal support provided at its forward end with a transverse driver passage towards which said support is tapered, the forward end of said support being rounded in two dimensions and a pair of spring fingers extending lengthwise of said support, said fingers being rigidly attached to the sides of said support at their ends remote from said passage, and being bent towards each other and shaped at their other ends to form between them a nail pocket in line with said passage."

Another improvement contributed to the success of this machine for this special work and is defined in the claims of patent No. 718,586, January 13, 1903, Stiggins. The utility of this invention in this organization is due to conditions peculiar to turn shoes, which must be provided for in lasting their heel seats. Owing to the fact that the counter must be introduced into the shoe while it

is turned wrong side out, as will be noted in Defendants' Exhibit 147, it is impossible to use in such shoes what is known as a "molded" counter, that is, a counter which, before it is assembled in the shoe, is molded to approximately the shape which it is to have in the finished shoe, and in particular has formed upon it in the molding operation a flange which, when the counter is placed in the shoe, rests upon the face of the insole of a welt or McKay shoe around the heel end of the shoe. The reason why a molded counter cannot be used in a turn shoe is because when, after the lasting operation, the shoe is turned right side out, the counter must be turned too, and in that turning operation every curve in the counter must be reversed. It would be impracticable, therefore, to use a molded counter since the flange on the counter would have to be reversed, which would be impracticable and difficult, and also the utility of the molded counter after it had been turned would be impaired.

Accordingly, in the manufacture of turn shoes, a "straight" counter is always used, that is, a flat piece of leather of the dimensions required, which is bent to fit the heel end of the last when it is introduced into the shoe. To facilitate the turning of the shoe this counter must be "in temper", that is, it must be thoroughly dampened so that during the turning operation the shape of the counter may be readily reversed without damaging it. In practically all McKay sewed shoes and in the majority of welt shoes it is the practice to use molded counters which, during the lasting operation, are dry. The proper shaping of the counter around the heel end of the shoe, at the ends of the counter at the beginning of the shank, presents problems peculiar to turn shoes. These problems were met by providing the organization of the turn heel lasting machine with the edge gauge which is shown in patent No. 718,586, January 13, 1903, Stiggins. This edge gauge was so constructed that it would engage the counter positively and firmly adjacent to the tread face of the last while it was self-adaptable to the varying inclinations of the side of the last around the rear end and sides of the heel and at the beginning of the shank. Claims 4 and 5 of this patent No. 718,586 are as follows: —

"4. An edge gage comprising a support, a segment piece, movable on said support in the arc of a circle and a contact piece mounted on said segment piece and having the center of said arc located in its contact surface.

"5. An edge gage comprising a support having a rib and segment piece having a groove to fit on said rib, a contact piece on said segment piece, and the spring tending to maintain said contact piece in normal position."

The organization of these claims enables the edge gauge to press positively and firmly against the stock requiring the most force to shape it properly to the last and yielding against that portion which requires less pressure.

In addition to the patents which I have mentioned which adapt the organization of this machine to the peculiar conditions met in the lasting of turn heel seats, the machine embodies mechanisms set forth in other patents which have been described in connection with other models of the hand method lasting machine. The patents defining in their claims the mechanism embodied in this machine at the present time are as follows:—

- No. 584,743, June 15, 1897, Ladd.
- No. 597,321, January 11, 1898, Ladd.
- No. 718,586, January 13, 1903, Stiggins.
- No. 1,003,984, September 26, 1911, Clary.
- No. 1,014,940, January 16, 1912, Bond (original application filed February 25, 1907).

This machine is put out by the United Shoe Machinery Company through its lasting department.

#### LASTING MACHINE: CONSOLIDATED HAND METHOD (WELT SIDE).

For a number of years after the formation of the United Shoe Machinery Company in 1899, it was the general practice for shoe manufacturers who use lasting machines of the bed type for welt shoes to last toes and heels of the shoes on the bed lasting machine and to last the sides, that is, the shanks and foreparts, by hand; and this practice continued for a number of years after the formation of the United Shoe Machinery Company in those factories where the bed type of lasting machine was used.

In those factories, however, where the welt shoes were lasted on the hand method lasting machine the shoes were lasted all around by machine so that no hand operation was necessary. The machine known as the "Lasting Machine, Consolidated Hand Method (Welt Side)" was developed in order that the company might be able to supply to those manufacturers who were using the No. 5 lasting machine, the standard bed lasting machine of the United Company since January, 1908, a machine for use in lasting the sides of the shoe in foreparts and shanks, so that users of the No. 5 lasting machine might, like users of the hand method lasting machine on welt work, last their shoes all around by machine. It was not practicable to use regular hand method lasting machines for lasting sides of shoes because that machine is a highly organized machine provided with elaborate mechanisms intended particularly for use in lasting the toe, the most difficult part of the lasting operations, which mechanisms not only were not needed for the much simpler operation of lasting the sides of the shoe, but would actually be in the way of the operator. Accordingly there was produced and put into commercial use in September, 1908, a machine especially built for lasting the sides of welt shoes. Improvements embodied in this machine are defined in claims of those patents which have already been discussed in connection with the welt hand method lasting machine, so that it will be unnecessary to do more here than enumerate the patents, which are:—

No. 184,744, June 15, 1897, Ladd.

No. 597,321, January 11, 1898, Ladd.

No. 893,331, July 14, 1908, Ladd.

No. 1,005,234, October 10, 1911, Ladd and Stiggins.

This machine is supplied entirely free, without any charge whatever either by way or royalty or by way of initial payment, to shoe manufacturers using the No. 5 lasting machine and the pulling-over machine. The machine is put out by the United Company through its lasting department.

I produce a shoe, the sides and forepart of which were lasted on this hand method welt-side lasting machine. The toe and heel of this shoe were lasted on the No. 5 lasting machine.

[*Shoe illustrating operation of hand method welt-side lasting machine in shanks and for eparts, and No. 5 lasting machine at toe and heel, is introduced in evidence and marked "Defendants' Exhibit 149".*]

*Int. 79.* Have you collected under one or more separate covers the patents relating to lasting machines with regard to which you have testified?

*Ans.* Yes, sir; and I produce five volumes of patents, the first comprising the patents mentioned in the portion of my testimony relating to the Chase lasting machine.

[*Volume of patents relating to Chase lasting machine is introduced in evidence, and marked "Defendants' Exhibit 150".*]

[*Answer to Int. 79 continued:*]

The second volume comprises patents mentioned in the portion of my testimony relating to lasting machine No. 5, U. S. M. C.

[*Volume of patents relating to lasting machine No. 5, U. S. M. C., is offered in evidence, and marked "Defendants' Exhibit 151".*]

[*Answer to Int. 79 continued:*]

The third volume comprises the patents mentioned in the portion of my testimony relating to the Ideal lasting machine.

[*Volume of patents relating to Ideal lasting machine is introduced in evidence, and marked "Defendants' Exhibit 152".*]

[*Ans. to Int. 79 continued:*]

The fourth volume comprises the patents mentioned in the portion of my testimony relating to the McKay & Copeland lasting machine.

[*Volume of patents relating to the McKay & Copeland lasting machine is offered in evidence, and marked "Defendants' Exhibit 153".*]

[*Ans. to Int. 79 continued:*]

The fifth volume comprises all of the patents mentioned in the portion of my testimony dealing with all five of the models of the hand method lasting machine. These models are:—

"Lasting Machine, Consolidated Hand Method (McKay)".

"Lasting Machine, Consolidated Hand Method (Welt)".

"Lasting Machine, Consolidated Hand Method (Turn Toe)".

"Lasting Machine, Consolidated Hand Method (Turn Heel Seat)".

"Lasting Machine, Consolidated Hand Method (Welt Side)".

[Volume of patents dealing with five models of hand method lasting machine is introduced in evidence, and marked "Defendants' Exhibit 154".]

*Int.* 80. Please give the number, date and name of the patentee of the several patents contained in the several volumes just offered in evidence as Defendants' Exhibits Nos. 150, 151, 152, 153 and 154.

*Ans.* DEFENDANTS' EXHIBIT 150.

No. 25,673, October 4, 1859, Purinton.

Reissue, No. 1,382, January 6, 1863, Purinton.

No. 28,120, May 1, 1860, Wells.

No. 41,967, March 15, 1864, Wells.

No. 44,916, November 1, 1864, Fischer.

No. 9,651, June 1, 1869, Fischer.

No. 340,860, April 27, 1886, Chase.

No. 364,088, May 31, 1887, Chase.

No. 376,368, January 10, 1888, Chase.

No. 483,375, September 27, 1892, Chase.

No. 545,052, August 27, 1895, Chase.

No. 566,831, September 1, 1896, Willard.

No. 569,182, October 13, 1896, Dunphy.

No. 569,231, October 13, 1896, Ray.

No. 571,339, November 17, 1896, Chase.

No. 571,404, November 17, 1896, Shaw.

No. 571,429, November 17, 1896, Chase.

No. 1,053,612, February 18, 1913, Keyes (application filed December 26, 1908.)

DEFENDANTS' EXHIBIT 151.

No. 552,834, January 7, 1896, Grandy.

No. 569,231, October 13, 1896, Ray.

No. 571,429, November 17, 1896, Chase.

No. 588,568, August 24, 1897, Grandy.

No. 601,934, April 5, 1898, Brock.

- No. 946,708, January 18, 1910, Snow.  
Reissue No. 13,292, September 19, 1911.  
No. 957,949, May 17, 1910, Glass.  
Reissue No. 13,505, January 7, 1913, Glass (application filed December 30, 1905.)  
No. 958,280, May 17, 1910, Plant.  
No. 1,002,818, September 12, 1911, Brock.  
No. 1,004,659, October 3, 1911, Keyes.  
No. 1,017,124, February 13, 1912, Winkley and Alley (application filed April 29, 1896).  
No. 1,018,025, February 20, 1912, Winkley and Alley (application filed July 22, 1896).  
No. 1,018,477, February 27, 1912, Brock (application filed October 26, 1907).  
No. 1,066,374, July 1, 1913, Brock (application filed October 26, 1907).

DEFENDANTS' EXHIBIT 152.

- No. 521,954, June 26, 1894, Grandy.  
No. 552,834, January 7, 1896, Grandy.  
No. 558,043, April 14, 1896, Copeland, Crisp, Grandy and Avery.  
No. 571,429, November 17, 1896, Chase.

DEFENDANTS' EXHIBIT 153.

- No. 548,671, October 29, 1895, Stirckler.  
No. 548,862, October 29, 1895, Brock.  
No. 601,933, April 5, 1898, Brock.  
No. 601,935, April 5, 1898, Brock.  
No. 823,664, June 19, 1906, Brock.  
No. 1,030,564, June 25, 1912, Brock (application filed July 19, 1898).

DEFENDANTS' EXHIBIT 154.

- No. 274,207, March 20, 1883, Matzeliger.  
No. 281,306, July 17, 1883, Scott.  
No. 284,906, September 11, 1883, Scott.  
No. 292,575, January 29, 1884, Pearson.

- No. 415,726, November 26, 1889, Matzeliger.  
No. 421,954, February 25, 1890, Matzeliger.  
No. 423,920, March 25, 1890, Gooding and Ladd.  
No. 423,921, March 25, 1890, Gooding and Ladd.  
No. 423,922, March 25, 1890, Gooding and Ladd.  
No. 423,937, March 25, 1890, Matzeliger.  
No. 441,482, November 25, 1890, Gooding and Ladd.  
No. 459,899, September 22, 1891, Matzeliger.  
No. 500,141, June 27, 1893, Ladd.  
No. 510,972, December 19, 1893, Ladd.  
No. 510,973, December 19, 1893, Ladd.  
No. 510,975, December 19, 1893, Ladd.  
No. 510,976, December 19, 1893, Ladd.  
No. 510,977, December 19, 1893, Ladd.  
No. 510,978, December 19, 1893, Ladd.  
No. 523,939, July 31, 1894, Ladd.  
No. 533,394, January 29, 1895, Mosher.  
No. 562,119, June 16, 1896, Carter.  
No. 564,931, July 28, 1896, Ladd.  
No. 584,741, June 15, 1897, Ladd.  
No. 584,742, June 15, 1897, Ladd.  
No. 584,743, June 15, 1897, Ladd and McFeely.  
No. 584,744, June 15, 1897, Ladd and McFeely.  
No. 597,321, January 11, 1898, Ladd.  
No. 696,717, April 1, 1902, Cavanagh.  
No. 696,740, April 1, 1902, Ladd.  
No. 718,586, January 13, 1903, Stiggins.  
No. 784,251, March 7, 1905, DeMinico.  
No. 786,047, March 28, 1905, McFeely.  
No. 893,331, July 14, 1908, Ladd.  
No. 931,809, August 24, 1909, Stiggins.  
No. 944,116, December 21, 1909, Wade.  
No. 6,620, January 18, 1910, Stiggins.  
No. 999,233, August 1, 1911, Ladd and Stiggins.  
No. 1,003,984, September 26, 1911, Clary.  
No. 1,005,234, October 10, 1911, Ladd and Stiggins.

No. 1,005,929, October 17, 1911, Bond.

No. 1,009,054, November 21, 1911, DeMinico.

No. 1,014,940, January 16, 1912, Bond (application filed February 25, 1907).

No. 1,027,510, May 28, 1912, Stiggins (application filed March 21, 1901).

[*Adjourned to 10 o'clock A. M., Tuesday, October 14, 1913.*]

BOSTON, MASS., October 14, 1913.

MACHINES RELATING TO THE MANUFACTURE AND ATTACHING  
OF HEELS.

*Int.* 80. In the list of machines submitted by you in answer to interrogatory 7, you refer to machines relating to the manufacture and attaching of heels. State as briefly as possible what were the more important of the machines for these purposes that were standard with the United Company in 1899, and their place in the manufacture of shoes. If the same were the subjects-matter of Letters Patent of the United Company, name the patents. State also the extent and character of the development of this machinery since 1899, what improvements and modifications have been made, if any, and if such improvements and modifications have been the subjects-matter of Letters Patent of the United Company, name the patents.

*Ans.* The heel-attaching operation comprises, generally speaking, the securing of the heel and the toplift to the shoe by the driving of nails through the heel, out-sole and insole and clinching them on the itside of the shoe by turning the points back into the insole. This work is done in two ways. When the heel is "surface nailed" the nails are driven through the toplift and heel at one operation. When the heel is "blind nailed" the heel proper is attached by driving nails through the heel, out-sole and insole and clinching them as I have described, leaving the head ends of the nails projecting above the outer face of the heel a distance slightly less than the thickness of the toplift, and then "spanking" the toplift upon those projecting head ends of the nails. Only the heels of the cheaper grades of shoes are "surface

nailed", and the heels of all the better and higher grades of shoes are always "blind nailed", as "blind nailed" heels present a much more attractive appearance. Heel-attaching machines of the present day are highly organized machines, comprising elaborate mechanism for presenting in proper relation for the heel-attaching operation the shoe, heel, toplift and nails. I will not undertake at this time to enumerate these mechanisms or to state their respective functions.

Heels are prepared for the heel-attaching operation in the following manner: The first step is "building" the heel. In this operation the heel "lifts" comprising pieces of leather, died out to the required shape, are placed one upon another until the heel blank is of the required height and then the lifts are usually secured together by driving one or two nails through the lifts. These heel lifts, however, are often warped, owing to the fact that the portions of the hide from which they are cut are warped, and even if the lifts were always flat they would not fit tightly enough together, so that if attached to the shoe in this condition there would be substantial cracks between adjacent lifts. Furthermore, the "heel-seat face" of the heel is not of the proper shape to fit the more or less convex heel-seat end of the sole. Accordingly, before the heel-attaching operation, it is the practice to compress heels, the object of this operation being to force the lifts closely together and simultaneously to shape the "heel-seat face" of the heel so that it will fit approximately the heel seat of the sole. This operation is performed by putting the heels through a heel-compressing machine which subjects a heel to great pressure, usually at least fifty or sixty tons.

#### HEEL COMPRESSING MACHINES.

A heel-compressing machine of the present commercial type comprises, generally speaking, side dies for shaping the sides and curved rear end of the heel, a breast die for engaging and shaping the breast face, that is, the front face of the heel, and relatively movable dies for engaging and shaping the tread face and heel-seat face. These dies are operated to impart great pressure to the heel

in the operation of the heel-compressing machine, which is very heavy and powerful. After the heel-compressing operation the heel lifts are forced closer together so that the heel is practically one solid piece of leather, and the heel-seat face of the heel is given the desired concave shape to correspond with the shape of the heel end of the sole.

The first commercial heel-compressing machine is shown in patent No. 105,030, July 5, 1870, Bigelow. This machine was commercially used for many years. A typical claim of this Bigelow patent is the first :—

"1. The combination of the follower F with the die E, substantially as and for the purposes set forth."

The "follower F" of this claim is the die for engaging the heel-seat face of the heel. This die is known in the trade as a "follower".

Just prior to February, 1899, the McKay Shoe Machinery Company was putting out two types of heel-compressing machines. One of these, known as the "Fisher Compressing Machine", was constructed substantially as shown in patent No. 350,051, September 28, 1886, Glidden. This machine was adapted for use in connection with the heel-attaching machine known as the "McKay Rapid Nailer". That machine required that the heel to be attached by it should be "loaded" before the heel-attaching operation. A loaded heel is a heel which has been compressed and into which the nails have been partially inserted, to be fully driven later by the heel-attaching machine. The Fisher compressing machine, in addition to compressing the heel, formed holes extending part way through the heel into which nails were stuck by boys, and the heels were then ready for the operation of the McKay rapid nailer.

About 1893 the inventors of the McKay & Bigelow Heeling Machine Association, predecessor in business of the McKay Shoe Machinery Company, which was putting out the Fisher compressing machine, produced a machine which was a substantial advance in the industry in that it not only compressed the heels and formed holes for the reception of the nails, like the Fisher compressing machine, but it also inserted the attaching nails in those holes, thus

producing automatically a compressed and loaded heel. As I have explained, the Fisher compressing machine only formed the holes and the nails had to be inserted in the holes by hand. I produce a loaded heel which was compressed and loaded on this improved machine first put out about 1893 and known as the "Automatic Heel Compressing and Loading Machine".

[*Loaded heel produced by "Automatic Heel Compressing and Loading Machine" is offered in evidence, and marked "Defendants' Exhibit 155".*]

[*Answer to Int. 80 continued:*]

This machine was being put out by the McKay Shoe Machinery Company just prior to February, 1899, and was constructed substantially as shown in patent No. 543,804, July 30, 1895, Glidden and Small. The machine embodied mechanisms set forth in all twelve of the claims of that patent. The machine was organized to take nails from bulk in a hopper and to present in position for the nail-inserting operation the desired number of nails properly arranged to be inserted at each operation of the machine. The nail-arranging mechanism was constructed substantially as shown in patent No. 577,212, February 16, 1897, Small, and six of the seven claims of that patent define mechanism embodied in the nail-handling organization of that machine. That mechanism was also defined more broadly in the claims of patent No. 577,212, February 16, 1897, Small.

This later machine, the Automatic compressing and loading machine, was, like the Fisher compressing machine, a companion machine for the McKay rapid nailer. As I have stated, the McKay rapid nailer required that the heel which was to be attached should have been loaded previously to the operation of that machine. This McKay rapid nailer was, however, superseded in 1898 by the machine then known as the "Improved Rapid Nailer", which was organized to take from a mass of nails the required number of nails for each heel, automatically arrange those nails with their points all extending in the same direction, present them in proper position for the operation of the drivers, and then to drive the nails automatically and thereby attach the heel to the shoe.

Obviously, in the operation of this improved rapid nailer, it was no longer necessary that the heels should be loaded before the heel-attaching operation. On the other hand, trade conditions required then, that is, about 1898, as they always have since, that heels be compressed before they are attached to shoes. The Fisher compressing machine was already out of date, and competitors were offering to the trade a greatly improved heel-compressing machine. Under these conditions the McKay Shoe Machinery Company was obliged to supply for the operation of compressing heels, either the out-of-date Fisher compressing machine with the pricking awls stripped from it, or the elaborate Automatic compressing and loading machine stripped of its nail-arranging organization, awls and nail drivers.

In other words, the McKay Shoe Machinery Company, just prior to February, 1899, did not have a satisfactory heel-compressing machine.

#### COMPRESSING MACHINE : MODEL 4, AUTOMATIC HEEL.

Immediately after the formation of the United Shoe Machinery Company in February, 1899, it undertook the development of a satisfactory modern heel-compressing machine, and eventually produced the machine which has since been known as the "Compressing Machine No. 4, Automatic Heel", which was first put out for commercial use in September, 1900. The machine as first put out was constructed substantially as shown in patent No. 776,787, December 6, 1904, Leland (application filed August 29, 1902). One of the chief objects which the inventors had in mind in developing this machine was to produce a machine which would handle the heel throughout its operation in such manner as not to deface or injure the heel in any way. In both the Fisher compressing machine and the Automatic compressing and loading machine, the heel had been removed from the mold by means of awls in the heel-seat die which were forced into the heel during the compressing operation and removed it from the mold, in the Fisher machine holding it in the path of the heel-ejecting mechanisms, there being two such awls in the Fisher machine and three in the Automatic

compressing and loading machine. This arrangement was objectionable because awls defaced the heel and because they often failed to operate properly so that the heels were occasionally spoiled, and occasionally also the machinery was broken. In the operation of the Fisher compressor sometimes awls would get an unusually strong grip on the heels and, when the ejecting mechanism operated to knock the heels off the awls, sometimes the two or three lifts which were held by the awls would remain in the machine, the rest of the heel being knocked off from those lifts. This spoiled that heel, and also the next one which was operated upon, and frequently caused breakage of the machine. The machine of the Leland patent No. 776,787, December 6, 1904, was provided with an entirely new organization for getting the heel into the mold, and discharging it from the mold after the compressing operation. The machine was so organized that when, after the compressing operation, the mold was opened by moving the side and breast dies away from the heel, the bottom plate of the mold was raised to the same plane as the top surfaces of the side molds, thus presenting a substantially continuous plane face on which the heel rested in position to be ejected. The heel was then pushed off from that plate by a combined heel-ejecting and heel-feeding mechanism, which, immediately after knocking off the compressed heel, deposited a new uncompressed blank on the bottom plate, still in its raised position. The moment this bottom plate had received the new uncompressed blank it dropped back into normal position at the bottom of the mold, ready for a repetition of the compressing operation. In this manner the heel was handled by the machine in such manner that nothing was done to it at all except the application of the great pressure, which was, of course, the object of the operation.

The development of an organization by which the heel could be handled in the manner I have just indicated, presented problems which may be very briefly indicated as follows: It is important that the heel be deposited in the mold when the mold is open to substantially the fullest extent, in order that accidental engagement of the heel with the side or breast dies, consequent misplace-

ing of the heel, and possible breakage of the machine, may be avoided. On the other hand, as much time as possible must be afforded for the ejecting of the compressed heel and the feeding and depositing in the mold of the uncompressed blank. These problems were effectively solved in the operation of this new "No. 4 Heel Compressing Machine". A typical claim of patent No. 776,787, directed to this organization, is the forty-second, which is as follows:—

"42. A compressing machine, comprising a mold and a co-operating die, means for relatively moving said mold and die, and an independently movable plate normally forming the bottom of the mold, combined with means for moving said plate to cause a compressed heel to be discharged from the mold during the first portion of the movement of the mold away from the die, and for causing said plate to return to normal position during the first portion of the movement of the mold toward the die."

The operation of this organization was greatly facilitated by a combined heel feeding and ejecting mechanism which presented a new uncompressed blank for the operation of the machine immediately upon the ejection of the previously compressed blank. A typical claim of patent No. 776,787 directed to this organization is the fifth:—

"5. In a heel compressing machine, feeding and ejecting means comprising arms having clamping portions for holding the heel blank to be fed and abutments for engaging the heel to be ejected."

The proper introduction and removal of heels from this machine was further facilitated by mechanism which operated to keep the molds open to their widest extent during as long a period as practicable during each cycle of the machine's operations. This mechanism is defined in a number of claims of the Leland patent No. 776,787, of which a typical claim is the third:—

"3. In a heel compressing machine, means for compressing a heel, said means including a reciprocating head, a mold comprising movable members mounted on said head, actuating links therefor, each connected at one end to said members and having its other end connected to a fixed part of the machine, one of said connections permitting a limited amount of lost motion, and means for controlling the period when said lost motion may take place,

whereby the mold is open during the first portion of the descent of the reciprocating head, and remains open until the last portion of the rise of the head."

The desired co-operation of the side and the breast dies for opening and closing the mold was secured by the organization defined in a number of claims of this Leland patent No. 776,787, of which a typical claim is the twenty-fifth:—

"25. A heel compressing machine provided with a heel mold comprising side compressing dies and a breast plate connected together to permit a limited movement for closing and opening the mold, and means to move said members in the same plane, for the purpose described."

The machine of this Leland patent No. 776,787, December 6, 1904, embodying mechanisms defined in most of the forty-two claims of that patent, provided a far more satisfactory heel-compressing machine than either the old Fisher machine or the Automatic compressing and loading machine, and the occasional spoiling of heels and frequent breakage of parts which seriously interfered with the operation of those two older machines was obviated in this new No. 4 heel compressing machine.

During the first months of the commercial use of machines constructed as shown in Leland patent No. 776,787 it was found that the operation of the machine could be improved upon by embodying in it improvements shown in patent No. 776,823, December 6, 1904, Allen (application filed November 12, 1902). These improvements which were adopted in May, 1901, comprised, first, improved means for keeping the mold wide open as long as possible during each cycle of the machine's operation. A typical claim on this feature is the first:—

"1. In a heel compressing machine, means for compressing a heel, said means including a reciprocating head and a divided mold comprising movable members, means for closing the mold, a spring interposed between said members for separating them to open the mold, said closing means having provision for positively opening the mold in case the spring fails to act properly."

Secondly, improved mechanism for properly locating the heel in the blank-feeding mechanism was defined in a number of claims of this patent No. 776,823, of which No. 5 is typical:—

"5. In a heel compressing machine, heel blank feeding mechanism having a holder comprising an abutment for the breast of the heel, and arms provided with movably mounted spring actuated devices, arranged to engage the oppositely curved surfaces at the rear of the heel to force it toward the abutment, substantially as described."

Third, an important improvement over this first construction which is defined by a number of claims of this Allen patent No. 776,823 was directed to preventing the heel plate of the mold, known as "toplift plate" because it engages the toplift face of the heel, from jumping out of the mold at the end of its necessarily quick rising movement, to raise the compressed heel at the completion of the compressing operation. A typical claim directed to this improvement is the fourteenth :—

"14. In a machine of the class described, heel compressing dies, a top lift plate comprising part of one of said dies, means for giving said top lift plate an independent relative movement, and means movable into and out of operative position for limiting the extent of independent movement of said top lift plate."

At the same time that the Allen improvements were adopted there were also incorporated in the machine further improvements shown in the drawings and set forth in the claims of patent No. 776,875, December 6, 1904, Tripp (application filed February 24, 1903).

These improvements consisted in reorganizing the blank-feeding mechanism so that it could be instantly removed to permit access to the dies so that the dies could be readily changed. In adapting the machine for different sizes and for different styles of heels, it is frequently necessary to change most, and generally all, of the dies, and mechanism which permits this change to be made quickly adds, of course, to the convenience of the operator, and decreases the time that the machine is idle during the changing of the dies.

Another improvement defined in the claims of this Tripp patent No. 776,875 was directed to preventing breakage of parts of the blank-feeding mechanism in case there were an obstruction to its operation, as would be occasioned, for example, by a misplaced heel. The organization of this No. 4 heel compressing machine was again improved in 1909 by a still further improved means for

keeping the molds wide open as much of the time as possible during the cycle of the machine's operations. These improvements are shown in the drawings and defined in the claims of patent No. 1,012,007, December 19, 1911, Pope (application filed July 6, 1909). This improvement was a matter of considerable practical importance in saving the operator's time and reducing the time that the machine was idle, owing to the necessity of replacing parts.

Several other improvements contributing to the successful operation of this machine are not shown in any patents which have as yet been granted. I should add also that the machine is provided with a considerable number of improvements which adapt it for operating on special classes of work. These improvements are shown and set forth in the claims of a number of patents in addition to those which I have mentioned, and are so numerous that I will not undertake to enumerate them at this time. However, all these improvements are, of course, of importance as they enable a manufacturer to do any kind of work which may come to the machine in the regular course of a day's work.

#### CONDENSED TOPLIFT.

A new use was found for this No. 4 heel compressing machine after the invention of the condensed toplift, which is shown and defined in the claims of patent No. 781,236, January 31, 1905, Small. A typical claim of this Small patent is the first:—

“1. As a new article manufacture, a top lift comprising a blank cut from a piece of leather and thereafter compressed and condensed by great pressure both upon its faces and its edges to such an extent that substantial changes are effected in its characteristics or qualities, substantially as described.”

This invention, introduced commercially in 1903, completely revolutionized the making of toplifts. Uncompressed toplifts are frequently warped and have irregular edges, and great difficulty had been experienced, prior to the invention of the condensed toplift, in properly handling toplifts in the heel-attaching machine. The toplift-handling mechanism of such a machine engages the toplift at its edges, and when the toplift is warped or its edges are

irregular there is great danger that the toplift will spring out during the sudden, quick movement of the toplift-holding mechanism into attaching position, and great difficulty was experienced in the spoiling of toplifts, and frequently in breakage of the machine, owing to the dislodgement or misplacement of the toplift in this way.

Furthermore, a blank which had been cut for a toplift was frequently found to have blemishes or defacing marks upon its grain face, that is, the face which is to be exposed in the finished shoe, which would prevent its use as a toplift, although otherwise, as regards the quality of its leather and other requisites for a toplift blank, this blank was entirely suited for use as a toplift. It was discovered by one of the United Company's inventors that a warped toplift could be made perfectly flat, that the edges could be made uniform, and that blemishes in the grain face of the blank could be removed so that either a blank which before compressing operation would be unfit for use could be, after being compressed, satisfactorily used as a toplift, or a toplift blank suitable for a cheap grade of shoes could be so substantially improved as to adapt it for a higher grade of shoes.

The No. 4 heel compressing machine was, after the production of this improved toplift, organized for applying to it the amount of pressure required to produce the substantial and striking improvements which are afforded by applying to a toplift blank a very heavy pressure. As the condensed toplift is ordinarily made, it has applied to it in the compressing machine a pressure of about seventy-five tons. In the operation of the No. 4 compressing machine for the production of condensed toplifts there was practiced the method defined in patent No. 772,840, October 18, 1904, Small, of which a typical claim is the first: —

"1. The method of producing a top lift which consists in first reducing the diameter of a top lift blank by pressure on its edges, and then exerting great pressure on its faces, whereby the characteristics and qualities of the top lift are appreciably changed."

I produce a sample of an uncompressed toplift.

[*Sample of uncompressed toplift is introduced in evidence, and marked "Defendants' Exhibit 156".*]

[*Answer to Int. 80 continued:*] [

I also produce a compressed toplift which was made from a blank cut out from a piece of sole leather right beside the uncom-pressed blank of Defendants' Exhibit 156.

[*Sample of compressed toplift is introduced in evidence, and marked "Defendants' Exhibit 157".*] [

[*Answer to Int. 80 continued:*] [

I further produce the piece of sole leather from which these two blanks were cut. The uncompressed and compressed blanks are numbered, respectively, 2 and 3, and the piece of sole leather is likewise numbered to indicate the openings from which the two top-lifts were cut.

[*Piece of leather from which Exhibits 156 and 157 were cut is offered in evidence, and marked "Defendants' Exhibit 158".*] [

[*Answer to Int. 80 continued:*] [

By way of further illustration of the advantages of the condensed toplift, particularly in its enabling the use for toplifts of portions of the hide of which no one would have thought of making toplifts prior to the introduction of the condensed toplift, I produce another condensed toplift, together with the piece of leather from which the toplift was died out.

[*Condensed toplift is introduced in evidence, and marked "De-fendants' Exhibit 159".*] [

[*Piece of leather from which Defendants' Exhibit 158 was cut is introduced in evidence, and marked "Defendants' Exhibit 160".*] [

[*Answer to Int. 80 continued:*] [

As indicating the permanent character of the transformation in the lift effected by condensing it, it may be of interest to note that the toplift of Defendants' Exhibit 159 was condensed over two years ago.

This condensed toplift was received with great favor by shoe manufacturers, and has gone into very extensive use. Practically every toplift which is being used in Brockton is condensed.

In 1905 this condensed toplift was improved by incorporating in it the improvements shown in the drawings and set forth in the claims of patent No. 1,007,687, November 7, 1911, Glidden (appli-

cation filed January 9, 1907). The improvement of this Glidden patent facilitated the application of the toplift to heels by providing a roughened surface to receive the cement used to assist in holding the toplift to the heel, surrounded by a narrow plane surfaced rim to act as a dam for the purpose of preventing the cement from flowing out on the edge of the toplift and heel. Without this dam there would be danger that in the toplift "spanking" operation the cement would be squeezed out. This improvement is defined in the three claims of patent No. 1,007,687, of which the second claim is typical:—

"2. As an article of manufacture, a flat leather top lift for a heel having its inner flesh face provided with numerous separate, relatively shallow, depressions to receive and to retain an adhesive for uniting the lift to the adjacent lift of the heel and with a relatively narrow rim having a plane surface extending around the margin of the lift and constituting a closing wall or dam for preventing the exaudition of the adhesive from the depressions when the top lift is being attached to the body portion of the heel."

This improvement is embodied in the two condensed toplifts of Defendants' Exhibits 157 and 159, having been incorporated in substantially all condensed toplifts which have been produced since the adoption of the improvement in 1905. In 1905 the condensed toplift was also further improved, as shown and set forth in the claims of patent No. 890,434, June 9, 1908, Mayo. The nature of this improvement is indicated by claim 3 of that patent, which is as follows:—

"3. As an article of manufacture, a leather top lift, the edge of which comprises a beveled upper portion and a relatively narrow portion adjacent the tread face, substantially perpendicular to said face and arranged and shaped to serve as a guide in the trimming of the heel."

In explanation of this invention it may be well to add that in the heel-trimming operation the heel is guided by a thin plate, which engages the edge of the toplift closely adjacent to the tread face of the toplift. Securing of the proper contour of the heel depends, therefore, upon the shape of the toplift at its edge next to the tread face of the heel. On the other hand, the portion of the edge

between that guiding surface and the flesh side of the lift, which is next to the body of the heel, should be beveled to afford sufficient stock to be trimmed off in the shaping of the heel as a whole. Modern styles of shoes require more or less inclination for the edge of the heel.

The improvement of this Mayo patent No. 890,434 is embodied in both of the toplifts of Defendants' Exhibits 157 and 159, and all condensed toplifts made since this improvement was adopted in 1905 have incorporated this improvement. Mechanism for producing the toplift shown and defined in all of the seven claims of patent No. 890,434 is shown in the drawings and defined in the claims of patent No. 1,012,681, December 26, 1911, Mayo (application filed February 20, 1907). A typical claim of this patent is the third:—

"3. In a machine for molding and condensing top lifts, a plurality of relatively movable dies through which great pressure is exerted both upon the faces and the edge of a top lift to shape and condense it, said dies being constructed and arranged to enclose, when in molding position, a chamber of the area and height of a condensed top lift consisting of a single thickness of sole leather, those dies which act upon the faces of the top lift having generally plane parallel surfaces and those dies which act upon the edge of the top lift at the sides and rear comprising a beveled portion and a perpendicular portion for engaging the top lift, each of such engaging portions being of less height than the thickness of the top lift and the active perpendicular portion being of lesser height than the beveled portion."

This heel-compressing machine which I have been discussing, the official name of which is "Compressing Machine, Model No. 4, Automatic Heel", is put out by the United Shoe Machinery Company through its heelng department.

Mr. WEBSTER. Please note petitioner's objection to patents, and reference to patents, issued after the filing of the petition herein.

#### NAILING MACHINE : LOOSE.

[*Answer to Int. 80 continued:*]

I have explained how the heel and toplift are prepared for the heel-attaching operation, but before the heel is attached to the shoe the

heel end of the sole must be prepared for the reception of the heel. In welt shoes the out-seam, that is, the line of stitching which secures the out-sole to the welt, always terminates on each side of the shoe at a point near the position of the front edge or breast of the heel after the heel is attached to the shoe, and in the majority of McKay sewed shoes also the line of stitching which secures the out-sole to the insole terminates substantially at the breast of the heel. Accordingly, at the end of the out-sole attaching operation the heel ends of the soles of all welt shoes, and a large proportion of McKay sewed shoes, are unattached, and before the heel can be attached to a shoe the heel end of the sole must be attached to the shoe. This operation is known as "heel-seat nailing". This operation is usually performed by a machine known as a "Loose Nailing Machine". Such a machine, as its name implies, is a machine for driving previously formed nails, and probably received its name from the fact that the earlier types of nailing machines in the shoe industry formed the fastenings as well as inserted them. Owing to the character of the fastenings which it inserts, the loose nailing machine presents a difficult problem which put it in a class by itself. Of these problems the most striking are the necessity for separating successively each nail from the body of nails which precedes it in the raceway down which the nails travel toward the point where they are to be inserted, the presentation of the nails in proper position to be driven, the forming of an awl hole in the stock to receive each nail, placing this awl hole in position in alignment with the driver so that the nail may enter the hole properly, the clamping of the work to maintain the awl hole in alignment with the driver and to support the shoe against the blow of the driver, the clinching of the point of the nail as it emerges from the stock, the release of the clamping pressure on the work to permit feeding of the shoe to present a new awl hole in position for the next fastening, and, finally, the provision of necessary adjustments in most of these mechanisms for adapting the machine, first, for variations in the work being done from point to point, and, secondly, for operating upon the many different kinds of work which may be represented to it and for enabling the machine to perform

its operation upon each different kind of work in the desired manner.

The machine which was being put out just prior to February, 1899, by the McKay Shoe Machinery Company was constructed substantially as shown in the drawings and set forth in the claims of patent No. 490,624, January 24, 1893, Goddu. Typical claims of this patent are the following:—

"1. In a nailing machine, a driver bar, a driver, a nose, and an awl bar slotted transversely at its lower end to constitute an awl receiving slot, and a clamp, combined with an awl adjustable in said slot toward and from the driver, substantially as described."

"3. In a nailing machine a pivoted head B provided with a projection B' to leave a slot as D', and a rock shaft D<sup>2</sup>, having a grooved arm D', combined with a stud made adjustable in the slot of said arm, and provided with blocks D' to slide in the slot D', substantially as described."

The principal work for which loose-nailing machines were used just prior to February, 1899, and for which they have been used since that time, is the nailing of heel seats, and the majority of loose-nailing machines which are being put out are being supplied for nailing heel seats of welt shoes. The machine is especially organized for this work. As to the requirements for this work of nailing heel seats of welt shoes, in the first place the organization must include proper means for supporting the last which is still in a welt shoe at this stage of its manufacture, and for holding the last properly in position to have a row of nails inserted around the margin. In the second place, the machine must have proper mechanism for determining with relation to the outline of the heel end of the shoe the line in which the fastenings shall be inserted, and this requirement is complicated by the fact that the sole blank used in a welt shoe is a "blocked sole" like Defendants' Exhibit No. 102, and at the time that the heel seat is nailed the heel end of the sole has not been trimmed and consequently in the heel seat nailing operation it is impossible to guide the shoe by means of the edge of the sole. To adapt the loose-nailing machine for meeting the first of the requirements above indicated, that is, properly supporting the last, it was organized as put out just prior to Febru-

ary, 1899, with the work-supporting mechanism shown and defined in the claims of patent No. 919,424, April 27, 1909, Cuff (application filed June 20, 1899). The majority of the twenty-seven claims of this patent define the mechanism as it was used at that time. Typical claims are the first and the eighth :—

"1. In a jack, a bed, a rocking foot having a curved under side sustained by and adapted to rock on said bed, and a jack spindle joined to said foot and extending therefrom in a direction approximately radial to the curved under side of said foot."

"8. In a jack, a rocker bed, a rocking foot sustained on said bed, said foot rolling from end to end on said bed, during changing positions of the spindle, a jack spindle joined at its lower end to said rocking foot centrally between its ends, and means to adjust said rocker bed, foot and spindle vertically."

The work-supporting means defined in the claims of this patent No. 919,424 enable the work to be presented with the heel seat of the sole in a substantially horizontal plane as the heel seat nailing operation progresses around the heel.

The second requirement above set forth for the successful use of a loose-nailing machine in the operation of heel-seat nailing, that is, the proper positioning of the line of fastenings with relation to the outline of the heel end of the last, necessitates, first, that the work be located by means which shall engage the upper of the shoe, close to the sole, since, as I have explained, the shoe cannot, during this operation, be guided by the edge of the heel end of the blocked sole. Secondly, that this means for engaging the upper move up and down with the shoe as the shoe is raised or lowered to permit the feeding of the work. And third, this means must be so constructed and operated that it shall not interfere with the removal of the shoe after the operation has been completed, or with the introduction of another shoe. These problems were solved by including in the organization of the machine the work-engaging means which is shown in the drawings and set forth in all of the ten claims of patent No. 865,329, September 3, 1907, Casgrain (original application filed August 4, 1898).

A typical claim of this patent is the third :—

"3. In a mechanism for inserting fastenings, a presser, a yield-

ingly mounted support adjacent thereto and movable in a vertical path relatively to said presser, a work engaging member on said support and adjustable means to positively regulate the extent of the movement of the latter in both directions."

#### NAILING MACHINE: HUNGARIAN.

Just before February, 1899, this loose-nailing machine was organized for performing special work for which there was then, and has continued to be, a limited demand. This special work was the driving of what is known as "Hungarian nails", that is, nails having large, wear-resisting rounded heads, which are used in shoes made for laborers engaged in certain occupations. When the machine is equipped for this special work it is known as "Nailing Machine, Hungarian". These nails are difficult to handle both in moving them along the raceway on their way to the inserting position and in separating the endmost nail in turn to present it to the driver. The mechanism which especially adapts the machine for Hungarian nailing is shown in the drawings and set forth in the claims of patent No. 932,535, August 31, 1909, Casgrain (granted on an application filed April 27, 1900). Typical claims of this patent are 19 and 21 :—

" 19. In a machine of the class described, the combination with a nail raceway of a knock-off device therefor, and means constructed and arranged to impart to said device a series of impulses of varying force in a prearranged order."

" 21. In a machine of the class described, a nail raceway, a separator, and means for moving said separator behind the endmost nail in the raceway to discharge the same, said separator being constructed and arranged to overlie and engage the head and also engage the shank of the endmost nail thereby to maintain it in a vertical position while being discharged."

#### NAILING MACHINE: NO. 2, LOOSE.

Soon after the organization of the United Shoe Machinery Company experiments were started with a view to producing a new high-speed loose-nailing machine. The organization of the old machine as it was put out in February, 1899, absolutely limited the speed of that machine, which was regularly run in commercial use, to a speed of 350 nails per minute. There were many reasons

for this limited speed of the old 1899 machine, of which perhaps the most important was the fact that in order to get the awl, nail and driver substantially in the same vertical line, the whole front of the machine carrying the awl, the driver, the raceway and nail separator was arranged to swing back and forth for every nail-driving operation of the machine. The momentum of the heavy casting which was thus oscillated in both directions 350 times a minute caused excessive vibration in the machine which was prohibitive of a higher speed, and also precluded a proper handling of the nails at any speed substantially higher than the regular commercial speed of that machine, which, as I have stated, was 350 nails per minute.

The experiments looking toward the production of a new high-speed loose-nailing machine were begun in February, 1903, and covered a number of years, during which time two experimental machines were successively constructed and tried out before a machine was produced which was considered sufficiently satisfactory to justify trying it out in shoe factories. The third machine, after extensive experimental use in different shoe factories, and after the many changes and improvements which are always made in the course of such experimental use, as weaknesses develop in the machine, or necessity for further improvements to adapt the machine for various kinds of work is recognized, the machine was adopted as the company's standard commercial loose-nailing machine in 1909. This machine was radically different from the old machine of 1899 in all respects and every step in its operation was performed in a different manner. It is impracticable at this time to refer to all of the novel mechanisms embodied in the machine, and it will perhaps be sufficient to state that among the more striking improvements in this new machine which is known as "Nailing Machine No. 2, Loose", are, first, the organization for getting successively in the same vertical line the awl, nail, and driver; secondly, the mechanism for supporting and clamping the work and the arrangement for operating this supporting means to release the work to be fed between the insertion of successive nails, and finally to release the work at the end of the machine's operations to facilitate the removal of the shoe and the introduction of another

shoe; and, third, the organization of the entire machine including all of its operating parts so that a certain operation of every part of the machine is assured at high speed. The organization of this new machine, "Nailing Machine No. 2, Loose," is set forth in the claims of the following patents:—

- No. 582,579, May 11, 1897, Cutter.
- No. 856,399, June 11, 1907, Eaton.
- No. 886,313, April 28, 1908, Cutter.
- No. 932,535, August 31, 1909, Casgrain.
- No. 1,011,941, December 19, 1911, Goddu (application filed May 10, 1910).
- No. 1,030,775, June 25, 1912, Goddu (application filed February 8, 1909).
- No. 1,031,438, July 2, 1912, Goddu (application filed October 10, 1907).

The commercial machine was and still is constructed substantially as shown in patent No. 1,030,775, June 25, 1912, Goddu.

When this machine is used for nailing heel seats of welt shoes and thereby preparing the heel ends of the soles of welt shoes for the reception of the heel in the heel-attaching operation, which is the most important use to which a loose nailing machine is put, it is also organized with mechanisms defined in the claims of patent No. 865,329, September 3, 1907, Casgrain, and patent No. 919,424, April 27, 1909, Cuff. Both of these patents were discussed by me, and typical claims quoted from them, in connection with my testimony in regard to the old loose nailing machine of 1899.

Referring to those patents on the list which I have just read, which represent the more notable improvements embodied in this new No. 2 loose nailing machine, the present standard commercial machine mechanism for controlling the operation of the work supporting and presenting means is defined in the claims of the following patents:—

- No. 582,579, May 11, 1897, Cutter.
- No. 1,011,941, December 19, 1911, Goddu (application filed May 10, 1910).
- No. 1,031,438, July 2, 1912, Goddu (application filed October 10, 1907).

Claim No. 23 of patent No. 582,579 is as follows:—

“23. In a nailing machine, a stock support, a starting and stopping mechanism, a driving shaft, mechanism operated by said shaft to periodically depress said support to permit the feeding of the work, and independent means controlled by said starting and stopping mechanism to finally depress the horn when the machine is stopped, for the purpose set forth.”

The first claim of patent No. 1,031,438 is as follows:—

“1. In a machine of the class described, the combination with a work support, of means for causing said working support normally to clamp the work, adapted to accommodate itself to varying thicknesses, means for intermittently suspending the operation of said first named means without disturbing the adjustment of the work support for the particular thickness clamped, and positively controlled means co-operating with said suspending means to positively lower the work support a uniform distance while the operation of said first named means is suspended and then to positively restore said work support to the control of said first named means.”

An important characteristic of the nail-handling machine of this new No. 2 loose nailing machine is set forth in patent No. 586,313, April 28, 1908, Cutter, of which a typical claim is the seventeenth:

“17. In a nailing machine, an awl, a driver and a movable nail throat, means to actuate said awl to feed the work, means to move the nail throat out of the path of the awl during the feeding movement of said awl and means also actuated by said last named means for delivering a nail to said nail throat as said nail throat again comes into line beneath the driver.”

Another important feature of this nail-handling mechanism is set forth in broad terms in the twenty-fourth claim of patent No. 932,-535, August 31, 1909, Casgrain, which is as follows:—

“4. In a machine of the class described, the combination with a driver, a part provided with a passage for said driver, and a nail raceway, of a separator arranged for a two step nail separating movement, comprising an initial movement to separate the end-most nail in the raceway from the others, a dwell to permit the driver to ascend to clear the driver passage and a further movement to force the separated nail into the driver passage, and means to actuate said separator.”

Patent No. 1,030,775, June 25, 1912, Goddu (application filed February 8, 1909), which, as I have already stated, shows sub-

stantially the commercial machine, defines in nearly all of its forty-six claims mechanisms embodied in the present standard commercial loose-nailing machine put out by the United Company. Typical claims of this patent are the following:—

“ 8. In a machine of the class described, the combination with a driver, a raceway and an awl, of a movable throat having a fastening receiving opening, means for bringing said awl and the fastening receiving opening of said throat alternately beneath the driver, and means for delivering a fastening from said raceway to said fastening receiving opening of said throat as said throat comes into position beneath the driver.”

“ 10. In a machine of the class described, the combination with an awl and a fastening receiving throat movable alternately to the same point in direction substantially normal to each other, of means for controlling positively the movements of said awl and said throat, means for delivering a fastening to said throat, and means to drive said fastening into the awl hole while the throat is located at said point.”

“ 18. In a machine of the class described, a driver, a fastening receiving throat and an awl movable alternately to a point beneath the driver in directions at substantially right angles to each other, a raceway in the line of movement of said awl, means for controlling positively the movements of said awl and said throat, a separator movable with said throat into co-operative relation to said raceway, and yielding connections between said separator and said throat whereby misplaced fastenings will not interfere with the timing of the movements of the positively controlled parts.”

“ 25. A machine of the class described, having, in combination, a raceway, a driver guide provided with a driver passage into which said raceway opens, a driveway and separator constructed to move the shank of the fastening into the driver passage in advance of the head, means for operating said driver and said separator constructed and arranged to operate therein in such time relation to each other that the separator traps in the driver passage the shank of the endmost fastening in the raceway while the driver retains the head of said fastening in the raceway and that then there is a dwell in the movement of the separator while the driver rises to release the head of said fastening.”

“ 45. A machine of the class described, having, in combination, an awl, means for moving said awl to feed the work, a fastening receiving throat normally located within the path of the work feeding movement of said awl and movable transversely to said path to place it out of the way of the awl during its work feeding movement, a driver and means for imparting to said driver a quick

upward movement to clear the throat in advance of the work feeding movement of said awl."

The organization in the loose nailing machine set forth in the claims which have just been quoted solved the problems of getting the awl, nail and driver successively in the same location by operations which together impose so light a burden upon the machine that the organization permits the running of the machine at practically any speed which is desired.

Machines constructed substantially as set forth in the patents which have been discussed, but also embodying other mechanisms defined in the claims of other patents as well as some mechanisms on which patents have not as yet been granted, are being tried out under commercial conditions in shoe factories and will probably soon be adopted. These mechanisms adapt this loose-nailing machine No. 2 for a new class of work, that is, for attaching out-soles of the cheaper grades of shoes by what is known as "all around nailing". Improvements which adapt the machine for that special work have to do with the automatic supplying of nails of different lengths according to the thickness of the stock being operated upon. In most shoes of the class for which this machine will be used there is a substantial difference between the thickness of the stock in the forepart and in the shank and a longer nail is required for the forepart than the shank.

The minimum speed at which this No. 2 loose-nailing machine, the present standard commercial loose-nailing machine, is being operated in shoe factories is 525 nails per minute, which is a capacity fifty per cent greater than that of the old 1899 loose-nailing machine, which, as I have stated, was run regularly at a speed of 350 nails per minute. In many factories the new loose-nailing machine is speeded up to 550 or 600 nails per minute.

This loose-nailing machine No. 2 is put out by the United Company through its metallic department. Up to September 1, 1913, 442 of the new machines had been put into use. One of these machines is adapted to nail heel seats of shoes which have been operated upon by from five to seven welt and turn sewing machines.

## HEEL ATTACHING MACHINES.

For the heel-attaching operation there were used, just prior to February, 1899, two types of machines, both of which were being supplied to shoe manufacturers by the McKay Shoe Machinery Company, one of the predecessors of the United Shoe Machinery Company. One of these machines was then known as the "Improved Rapid Nailer", and now as improved from time to time since that date, as the "Loading and Attaching Machine, McKay Automatic Heel". The other machine was known as the "American Lightning Nailing Machine". The first of these machines, the improved rapid nailer as it was known in 1899, was adapted for attaching heels of McKay sewed shoes and the heavier kinds of shoes, such as nailed, pegged and standard screwed shoes. The other machine, the American lightning nailing machine, was used to attach the heels of welt shoes. While these two machines were very differently organized, and while there were certain fundamental differences between them which I shall later point out, they were both provided with means for supporting the work, with means for presenting a heel in proper relation to the heel end of the shoe for attachment to the shoe, and for subsequently presenting a toplift to be attached to the heel, with means for successively presenting the heel against the shoe and the toplift against the heel, and with means for driving nails through the heel to attach it to the shoe. In both types of machines on the better classes of work the nails which attached the heel to the shoe were left projecting slightly above the surface of the heel and the toplift was attached to the heel by forcing it upon the projecting head ends of the nails. This toplift attaching operation is known in the trade as toplift "spanking", and heels having their toplifts attached in this manner are called "blind nailed heels", probably because the head ends of the nails are not visible in the finished shoe as they do not project entirely through the toplift. On the cheapest grades of shoes the toplift is not separate from the heel and the attaching nails are driven through both the toplift and the heel.

LOADING AND ATTACHING MACHINE: MCKAY AUTOMATIC HEEL  
(IMPROVED RAPID NAILER).

The average capacity of the improved rapid nailer in 1899 was nearly twice the average capacity of the lightning machine and consequently the improved rapid nailing machine was used almost exclusively in the attaching of the heels of McKay sewed shoes and for the cheaper grades of shoes for which work it was intended and particularly adapted. The most striking feature of the organization of the improved rapid nailer was the mechanism by which the required number of nails for each heel were taken automatically from a mass of nails in a hopper, were arranged automatically, all with their points extending in the same direction, and were presented in the required horseshoe-shaped outline in proper position to be driven into the heel at the proper time. The improved rapid nailer was the first commercial machine comprising such an organization. The immediate predecessor of this machine was the McKay rapid nailer, which was not provided with any nail-arranging or nail-handling mechanism and which, as I have stated in previous testimony, required that the heel be "loaded" before it was operated upon by the machine. As I have explained, a loaded heel is a heel in which nail holes have been formed and the nails have been partially inserted before the heel-attaching operation. This McKay rapid nailer had been superseded by the improved rapid nailer just before the organization of the United Shoe Machinery Company, and each improved rapid nailer when run to full capacity was effecting a saving of from one dollar to three dollars a day as compared with the old machine when run to full capacity. The improvements which contributed to this greater capacity of the improved rapid nailer are shown and described in the claims of patents —

No. 694,656, March 4, 1902, Mayo (application filed March 3, 1897);

No. 707,136, August 19, 1902, Mayo (application filed June 15, 1898);

No. 707,139, August 19, 1902, Mayo (original application filed February 25, 1898).

The machine as first put out embodied the improvements defined in all of the fifty-eight claims of the first patent on the above list, No. 694,656. Many of these claims define in varying terms the organization of the nail-supplying and heel-attaching mechanisms as always embodied in the improved rapid nailer and in the machine now put out and known as "Loading and Attaching Machine, McKay Automatic Heel". A typical claim directed to the organization of the machine is claim 45 :—

" 45. A heel attaching machine comprising mechanism for supporting a shoe and for presenting a heel to be attached to the shoe, nail driving mechanism, nail assorting mechanism, a movable device to transfer nails from the nail assorting mechanism to the nail driving mechanism and means for delivering nails from the nail assorting mechanism to the transferring device."

This machine of 1899 also comprised means for automatically presenting a heel and a toplift successively in proper relation to the shoe. A number of claims of this patent 694,656 are directed to this feature of the organization of the machine. Among its claims are 28 and 48, which are as follows :—

" 28. In a heeling machine, a nail block, a heel holder and a top lift holder movable independently of said nail block, and means to adjust one of said holders with relation to the other to insure the application of the top lift in proper position with relation to the attached heel."

" 48. In a heel attaching machine, mechanism for securing a heel to a shoe, a heel holder, and a top lift carrier, means to place the heel holder in position for the heel to be attached to the shoe, means for locking the heel holder in said position and automatic means to remove the heel holder and put the top lift carrier in position for the top lift to be attached to the heel."

The organization shown in this patent No. 694,656 for taking the nails from a mass of nails in a hopper and delivering them, all pointed in the same direction, did not prove commercially satisfactory because it failed frequently to deliver the full number of nails required, and also frequently failed to arrange the nails all pointed in the same direction. Failure in either of these respects was sufficient to prevent the commercial success of the nail-handling organization. Accordingly, prior to February, 1899, this nail-handling

organization was improved by incorporating in it the mechanism shown in patent No. 707,139, August 19, 1902, Mayo (application filed February 25, 1898).

The improved mechanism is set forth in all of the claims of that patent, of which a typical claim directed to the mechanisms for arranging the points of the nails all in the same direction, is the first:—

“1. In a nail assorting mechanism, a raceway to receive and guide nails, a device to reverse the nails traveling point first on said raceway, and means to prevent said device from acting on the nails traveling head first on said raceway.”

A characteristic feature of the organization of all the various types of nail arranging mechanisms which have been used on heel-attaching machines is a slightly inclined table comprising a large number of raceways down which the nails are made to travel by rapid, short reciprocations of the table lengthwise of the raceways. In the operation of the machine provided with the nail-handling organization of patent No. 694,656, it was found that the reciprocations of the nail-arranging mechanism jarred it to such an extent as frequently to knock the nails off the raceways. This difficulty was ingeniously overcome by the improvement defined in the claims of patent No. 707,136, August 19, 1902, Mayo (application filed June 15, 1898). A typical claim of this patent is the first:—

“In a nail assorting mechanism, a raceway composed of a plurality of grooved transversely arranged plates, and means to move them independently simultaneously in opposite directions, substantially as described.”

By dividing the raceway-carrying table into two plates and by reciprocating these two plates in opposite directions the momentum of the two plates neutralized each other sufficiently to overcome most of the difficulty occasioned by the excessive jarring of the nails on the raceways, which was the reason for the commercial failure of the earlier construction, as has been explained.

The machine as shown in patent No. 694,656, March 4, 1902 (application filed March 3, 1897), with the improvements which have just been discussed, was the commercial heel-attaching machine being put out by the McKay Shoe Machinery Company just

prior to February, 1899. For a short time after its formation the United Shoe Machinery Company continued to put out this machine in substantially the same form that it had been put out by the McKay Shoe Machinery Company. Immediately after the organization of the United Company experimental work was undertaken and carried on continuously for a period of several years looking toward the improvement of this improved rapid nailer to make it perform its work more satisfactorily. The attention of the United Company's inventors was first directed toward remedying the difficulties that were still encountered in the operation of the mechanism for arranging and delivering the nails all with their points in the same direction. One difficulty with this mechanism was its failure always to deliver nails properly to the nail block after they had been arranged all with their points in the same direction. This difficulty was due to the fact that in the organization of the heel-attaching machine the heel and toplift holder must necessarily move in their heel and toplift delivering operations between the nail block and the device for transferring nails from the nail-arranging mechanism to the nail block. There was, consequently, so much space between this device and the nail block that the nails frequently failed to enter the nail block properly. This difficulty was overcome in 1900 by adding to the organization a nail guide located between the nail-transferring device and the nail block. This improvement is defined in a number of claims of patent No. 884,513, April 14, 1908 (application filed January 10, 1902, Mayo). A typical claim directed to this improvement is the third:—

"3. In a machine of the class described, a nail block, a transferrer to present nails to the nail block, and a nail guide fixed in its position with relation to said transferrer and interposed between the nail holes of the transferrer and the nail holes in said nail block to guide the nails after leaving the transferrer on their way into the holes of the nail block."

Occasional failure of long-nails on their way from the point-arranging mechanism to the transferring device, to enter properly the nail-receiving holes in the transferring device, was remedied by providing a "nail gauge", which is defined in a number of claims of this patent No. 884,513, of which a typical claim is the sixth:—

" 6. In a heel-nailing machine, a nail transerrer provided with a nail receiver to receive nails and present them to a nail block, combined with an independent detachable nail gauge sustained by said nail receiver and having holes normally in line with the nail holes of said receiver."

The heel and toplift holding mechanism of the machine were also improved by the incorporation in the machine in 1900 of an improvement also defined in the claims of this patent No. 884,513, of which claim 22 is typical: —

" 22. In a heel-nailing machine, a plate having a guideway, a breast gauge having its shank held loosely in said guideway, a back gauge, means to move said back gauge to adapt the same to the work to be done, and a spring connected at one end to said breast gauge, and at its opposite end adjustably connected to said plate, that the pressure of the breast gauge may be exerted uniformly on the stock held between it and the back gauge, whatever its size."

The machine was further substantially improved in 1900 by improvements shown in the drawings and set forth in the claims of patent No. 1,030,654, June 25, 1912, Elliott (original application filed March 13, 1902). The most important of the improvements defined by the claims of this patent was a reorganization of the mechanism for imparting yielding pressure to the shoe and the heel prior to and during the operation of driving the nails. This improvement is defined in several claims of patent No. 1,030,654, of which claim No. 19 is typical: —

" 19. In a nailing machine, a driver carrying head, a set of drivers, spring sustainers depending from said head, a nail block head, a nail block, rods extending from said nail block head and guided by said driver carrying head, springs surrounding and supporting said rods and sustained by said spring sustainers, and means to move said driver carrying head positively in attaching a heel to a sole, the nail block head deriving a yielding movement from said springs whereby the nail block mounted on the nail block head is adapted to compress and hold the heel against the sole while the drivers act to drive nails contained in the nail block into the heel."

An improvement adding to the convenience of the operator and saving much of his time is defined in a number of the claims of this patent No. 1,030,654, of which No. 21 is typical: —

"21. In a nailing machine, a foot plate having a series of nail holes, and a guideway; combined with a mug having its nail holes arranged to correspond with some but not all the holes of said plate, and shaped to engage said guideway."

An improvement contributing to more accurate work of the machine is defined in a number of claims of this patent, of which the following is typical:—

"25. In a nailing machine, a band clamp holder, provided with an adjustable stop and a band clamp, the inner position of which is determined by the position of said stop in said holder."

The attention of the United Company's inventors was next directed toward improving the mechanism for taking the nails from bulk in a hopper, arranging the number of the nails required for the particular kind of work being done, with their points all in the same direction, and delivering them in position for the nail-driving operation. Despite numerous improvements which had been made in this mechanism shortly before 1899, considerable difficulty was still being experienced with it, particularly in the mechanism for getting the nails from the hopper on the raceways, and in the mechanism for delivering from the raceways to the device which transferred the nails to the nail block, in failing to supply the full number of nails required for each driving operation. The latter difficulty was remedied in 1902, by providing the organization with means which stopped momentarily the reciprocation of the raceways while each group of nails was being delivered. This improvement is set forth in the claims of patent No. 707,137, August 19, 1902, Mayo. A typical claim is the twenty-third:—

"23. In a nail assorting mechanism a raceway, a device to transfer nails from the raceways, means to reciprocate the raceway, and means for intermittently stopping the reciprocation of the raceway while the transferring device operates."

The difficulty which had been encountered in supplying to the raceways the proper number of nails required for each attaching operation was overcome in 1902 by the improvements of patent No. 707,138, August 19, 1902, Mayo and Elliott. Nine of the ten claims of this patent set forth improvements which were then

adopted, and many of the improvements have been retained in the nail-handling mechanism of this machine through its successive stages of development since that time. A typical claim of the patent setting forth mechanism which has always been used since 1902 is the ninth : —

" 9. In a machine of the class described, a raceway for receiving and guiding nails, said raceway having provision for rejecting nails not properly lodged thereon, a returning table for receiving and conveying the rejected nails, and a rotary magazine for supplying nails in bulk to the raceway and having an opening in one side to permit the return of nails to the magazine by the returning table."

Other improvements in the general organization of the machine have been made from time to time and the machine has also been provided, as required in the development of the industry, with improvements enabling it to operate satisfactorily on special kinds of work, for example, spring-heeled shoes and rubber-heeled shoes, and these improvements are defined in the claims of so many patents that it is not practicable to discuss them here. Some of these improvements are defined in the claims of pending applications. In the aggregate, including the patents to which I have specifically referred, the improvements now embodied in the commercial heel-attaching machine put out by the United Company for McKay work, that is, the "Loading and Attaching Machine, McKay Automatic Heel", embodies improvements set forth in the claims of more than twenty patents.

This machine is the present standard commercial machine put out by the United Company for attaching the heels of McKay sewed shoes and of shoes having their soles attached by wooden pegs, nails, or standard screws. Up to the end of the company's last fiscal year, March 1, 1913, 1567 of these machines had been put out. The machine has a large capacity and its output is about 1500 pairs per day. It is put out by the United Company through its heeling department.

[*Adjourned to 10 o'clock A. M., Wednesday, October 15, 1913.*]

BOSTON, MASS., October 15, 1913.

NAILING MACHINE: AMERICAN LIGHTNING.

[*Answer to Int. 80 continued:*]

In the manufacture of a welt shoe the last remains in the shoe, as a rule, throughout all the stages of the manufacture of the shoe. Accordingly, the last is still in the shoe when the heel is attached. It is clear, therefore, that the amount of pressure which can be exerted by the machine during the heel-attaching operation must be regulated, otherwise there would be danger of frequently breaking the lasts by excessive pressure as the stock upon which the pressure is exerted, comprising the heel, out-sole and insole, always varies somewhat in height in successive shoes operated upon by the machine. The American Lightning nailing machine is organized to meet these conditions, and was especially designed for attaching the heels of welt shoes while they are still upon the last. The construction of this machine just prior to February, 1899, was substantially as shown in patent No. 446,885, February 24, 1891, Pope. Ten of the thirteen claims of that patent set forth mechanisms which were embodied in the Lightning heeling machine at that time, that is, in 1899. One of the most important features of the organization of the machine was the means for preventing excessive pressure to avoid breaking the wooden lasts upon which the shoes were heeled. A typical claim directed to the means for accomplishing this purpose is the fifth:—

"5. In a heel nailing machine, the combination of a main frame, a stationary, perforated die block, a reciprocating nail driver block, a sliding jack, a jack support provided with a jack screw having a pinion, a horizontally reciprocating rack engaging the pinion, and a treadle mechanism connected with the rack to reciprocate the same for raising and lowering the jack, substantially as described."

The usual operation of the organization defined in the claim which has just been quoted was this: After jacking the shoe, that is, mounting it upon the work support, the operator brought the shoe into contact with the heel which was held against the stationary nail block by operating a foot treadle, in this manner exerting

upon the shoe and heel the preliminary measuring pressure which, broadly speaking, was manually effected. The operator then started the machine, and a predetermined amount of additional pressure sufficient to force the heel properly against the shoe was automatically applied by the machine, and then the attaching nails were driven and the toplift was attached. This operation was fundamentally different from that of the machine which I have discussed in my previous testimony, known as the "Improved Rapid Nailer", which, as I have explained, was the standard machine just prior to February, 1899, for attaching the heels of McKay sewed shoes, and for the heavier grades of shoes, including pegged, standard screwed and nailed shoes. The operation of the improved rapid nailer was automatic throughout, and as there was no means for measuring in any manner the pressure exerted by the machine, that pressure was greater for a higher heel. If it were attempted to attach the heel to a shoe on a wooden last by means of the improved rapid nailer, the last would almost always be broken when the stock, including the heel and the two soles, was thicker than the average. At this time, that is, just prior to February, 1899, the American Lightning heel nailing machine, which, for convenience, I shall refer to as the "lightning heeler", also incorporated mechanism set forth in the claims of a number of other patents. The heel blank-holding mechanism of the machine, which was organized to handle and to present properly to the nail-driving mechanism any heel blank of whatever size, was set forth in the claims of patent No. 584,752, June 15, 1897, Small.

The organization of means for providing the machine with the proper number of nails for each attaching operation, comprising two independent sets of mechanism which were operated alternately and which added considerably to the capacity of the machine, is defined in claim 6 of patent No. 599,012, February 15, 1898, Raymond, which is as follows:—

"6. The combination in a heel nailing machine, with the nail driving devices, of the templet and the nail carrier plates C<sup>1</sup>, C<sup>2</sup>, supported by their respective holding plates, one of which nail carrier plates is pivoted at one side of the median line of the templet

from front to rear, and the other of which nail carrier plates is pivoted upon the opposite side thereof, substantially as described."

The means for exerting automatically the final pressure upon the heel and shoe just prior to the driving of the nail, which is an important feature of the organization of the Lightning heeler, is defined in many claims of patent No. 891,192, June 16, 1908, Small. Typical claims of this patent directed to this feature of the organization of the machine are 39 and 49:—

"39. A machine for attaching heels, having in combination, a templet provided with driver passages, and a work support arranged for vertical movement toward and from the templet, and means for raising said work support vertically to subject the work to pressure between said support and the templet, comprising a cam arranged in substantial alignment with the driver passages."

"49. A machine for attaching heels, having in combination, a templet provided with driver passages, drivers arranged for movement in said passages, a movable pressure head, means for guiding said pressure head in a vertical path, a work support arranged to be moved vertically toward the templet by the pressure head, and a cam arranged to sustain said pressure head and in substantial alignment with the driver passages, and constructed to move the work support toward the templet and to hold the work under pressure during the driving of the nails."

Another important feature of the organization of the Lightning heeler consisted in the means which permitted adjustment of the automatic mechanism for applying the final pressure to adapt that mechanism for varying heights of heels. This improvement is also defined in the Small patent No. 891,192, June 16, 1908, and a typical claim is the fortieth:—

"40. The combination in a heel nailing machine of the templet, the work support, a vertically movable spindle supporting the same, a vertically movable pressure head, a device in alignment with the pressure head for actuating the pressure head, and an auxiliary head and means for varying its position upon the pressure head."

Including the claims directed to the features of the organization of the Lightning heeler, to which reference has already been made, this Small patent No. 891,192 contains sixteen claims which set forth features of the organization of the lightning heeling machine as it has been constructed for a number of years.

Among the improvements which have been made upon the Lightning heeling machine since February, 1899, is an improved means for supporting heels of the shoes made on unusually unsymmetrical lasts. The quality of the work was substantially improved by the adoption in the machine in 1900 of this improvement which is defined in allowed claims of a pending application filed May 17, 1901.

In 1905 the Lightning heeler was substantially reorganized to adapt it for attaching what are known as "high pitched" heels, that is, high heels which have their edge surfaces at the rear end sharply inclined backwardly from the tread face of the heel toward the upper, and which also have their breast faces inclined backwardly from the tread faces toward the sole of the shoe. About 1904, manufacturers of women's shoes began to make shoes with high-pitched heels in largely increasing numbers, and since that time the proportion of women's shoes made with high-pitched heels has been steadily increasing so that for a number of years the majority of all women's shoes have been made with this type of heel.

I produce a shoe which has a high pitched-heel, such as I have been describing.

[*Shoe having high-pitched heel is offered in evidence and marked "Defendants' Exhibit 161".*]

[*Answer to Int. 80 continued:*]

The abnormal shape of this heel requires that the attaching nails, in order to secure the heel properly, be driven at an inclination to the tread face of the heel. The reorganization of the Lightning heeler in 1905 enabled the machine to attach such heels properly by driving the nails at an inclination from the tread face toward the rear end of the heel at its junction with the end of the sole. The reorganized machine embodied improvements defined broadly in eleven claims of patent No. 1,000,957, August 15, 1911, Bates, granted upon an application originally filed August 15, 1903. A typical claim of this Bates patent is the following:—

"47. A machine for operating on heels having in combination, a pressure resisting member for engaging one side of the heel, a

gang of tools located on the opposite side of the heel and mounted to reciprocate toward and from said member, and a work engaging plate provided with perforations in alignment with said tools, all of said tools being inclined in the same general direction from normal to the work engaging face of said plate at the points at which the paths of the tools intersect said face and moving throughout their reciprocations in right line paths."

It may be of interest to note in connection with this Bates patent that the heeling machine constructed by Thomas G. Plant embodied improvements defined in a large number of claims of this patent.

The commercial construction of the Lightning heeler as reorganized in 1905 to adapt it for the attaching of high-pitched heels was almost identical, as shown in the drawings, described in the specifications and set forth in the claims of patent No. 887,870, May 19, 1908, Taylor (application filed August 8, 1904). The organization is set forth in thirteen of the claims of this patent, somewhat more specifically than in the Bates patent, No. 1,000,957, August 15, 1891, Bates, to which the Taylor patent is subordinate. Typical claims of the Taylor patent 887,870 are the first and tenth:—

"1. In a machine of the class described, the combination, with mechanism for driving vertically a group of nails, of means for holding a heel under pressure in oblique position with relation to the path of the nails."

"10. A heel attaching machine comprising mechanism for driving nails into a heel in an inclined direction, and means to spank a toplift on the ends of the nails in a direction parallel with the path of the nails."

The product of the Lightning heeler as reorganized in 1905 to insert heel-attaching nails at an inclination is defined in the three claims of patent 834,085, October 23, 1906, Taylor. A typical claim of this patent is the second:—

"2. In a boot or shoe, a heel comprising a series of lifts secured to the boot or shoe by nails having a uniform inclination from the treadface of the heel toward the rear of the heel, said nails being arranged over substantially the entire area of the treadface of the heel."

This patent No. 834,085 illustrates clearly in its drawings the type of heel to which I am referring and the advantages of driving

the heel-attaching nails at an inclination. It may be of interest to note here, also, that the product of the Plant heel-attaching machine is well described in all of the three claims of this patent No. 834,085.

While the reorganized Lightning heeler was successfully used for a number of years after 1905, the pressure necessarily exerted upon the heel preliminary to the operation of driving the nails was exerted at an oblique angle to the nail block, which constituted one of the pressure-applying members. This difficulty was remedied by one of the United Company's inventors by so reorganizing the machine that the heel-engaging nail block is at a right angle to the line of pressure exerted by the machine. This improvement is defined in all of the thirteen claims of patent No. 1,072,986, granted September 9, 1913, Pope (application filed January 12, 1911). A typical claim is the second:—

"2. A heelng machine having, in combination, a plate provided with a heel engaging face and a plurality of guiding passages extending at an inclination to said face, a full gang of tools for operating on a heel mounted obliquely and parallel with the guiding passages in said plate, said tools being movable into and out of said passages, and means for guiding said tools for movement in a vertical path while out of said passages, said means being constructed and arranged to permit the tools to move out of operative relation thereto on entering the guiding passages, whereby they may be guided in an oblique path by the guiding passages."

This improved inclined nailing organization which was incorporated in the machine early in July, 1911, is also defined in somewhat broader terms in two claims of patent No. 958,302, May 17, 1910, Plant. One of these claims is 16:—

"16. In a heelng machine, the combination with devices for operating on a heel, a nail block having apertures for the reception of said devices and means for moving said parts relatively toward and from each other, of means for guiding said devices and apertures into alignment, said means being constructed and arranged to lose control of the moving parts after said devices and apertures have become engaged."

The adoption of this improved organization which is constructed substantially as illustrated in the drawings of the Pope patent No.

1,072,986, above referred to, was prevented for some time because of the two claims in the Plant patent No. 958,302, to which I have referred, and the improvement was not adopted until after the Plant patent had been acquired by the United Company.

The importance of this inclined nailing organization may be judged from the fact that since December, 1905, over 60 per cent of all the Lightning heelers which have been put out have been organized as set forth in the Taylor patent No. 834,085, October 23, 1906, and as set forth more broadly in the claims of patent No. 1,000,957, August 15, 1911, Bates, which have been discussed in detail above. The proportion of the reorganized machines which have been supplied to manufacturers has been steadily increasing since December, 1909, over 70 per cent of all machines shipped having been so organized. A large number of machines which had been put out prior to the reorganization of the machine in 1905 have, at the request of the manufacturers using these machines, been reorganized to embody these improvements so that a large majority of all Lightning heelers which are now in use are organized to include these inventions. While, as has been stated, the reorganized Lightning heeler was originally intended for the attaching of high-pitched heels of women's shoes, it is advantageous to attach nearly all heels by means of this organization, and it is now being largely used on all classes of work. Its use on nearly every type of heel secures better attachment of the heel because most heels at their rear ends are inclined backwardly from the tread face toward the upper, and because in nailing practically all heels it is necessary to have the head ends of the nails a substantial distance from the edge of the toplift so as not to interfere with the insertion of slugs in the toplift, and it is also important that the points of the nails be clinched as near as possible to the edge of the sole in order to prevent any danger of the heel breaking away from the sole around the rear end and leaving a disfiguring space between the heel and the out-sole. Accordingly, to secure these advantages, the majority of all kinds of heels on welt shoes are now being attached by nails driven at an inclination rearwardly from the tread face of the toplift toward the sole.

The Lightning heeler has recently been again reorganized so that its operation is now entirely automatic. Until these recent improvements the preliminary heel-measuring engagement of the heel and shoe had always been secured by a treadle-operated mechanism, as was fully explained in a previous part of my testimony. In the new organization of the machine this preliminary measuring pressure is effected automatically. By this improvement the capacity of the machine is substantially increased and a more uniform and more accurate measuring operation is secured, since in the machine as formerly constructed the treadle-affected pressure varied with the force exerted by the operator in depressing the treadle. A substantial saving is also effected in lasts. The operator of the Lightning heeler would occasionally apply too much preliminary measuring pressure to the shoe, so that the final automatic pressure was excessive and would break the last. The commercial form of this newly organized Lightning heeler is shown approximately in a pending application filed in July, 1912, but it also embodies improvements defined in the claims of another pending application filed May 7, 1909, and two pending applications filed respectively September 9, 1910, and November 2, 1910.

An important feature of the reorganized automatic Lightning heeler is defined in several claims of patent No. 958,282, May 17, 1910, Plant, of which a typical claim is the fourth:—

"4. In a heel nailing machine, heel attaching mechanism, means for operating the same, devices for starting said means into operation, said devices being normally locked against movement in a direction to operate said mechanism, heel measuring mechanism, and means controlled by the heel measuring mechanism to unlock the said devices and permit operation of the heel attaching operating means."

#### LOADING AND ATTACHING MACHINE — MODEL B: MCKAY AUTOMATIC HEEL.

In November, 1910, some time before the reorganization of the Lightning heeler to render that machine entirely automatic, there was first put out for commercial use by the United Company a machine for attaching heels of welt shoes, known officially as "Load-

ing and Attaching Machine, McKay Automatic Heel, Model B." This machine is now the standard commercial machine of the United Company for attaching heels of welt shoes. The Lightning heeler continues, however, to be in some demand as manufacturers already equipped with Lightning heelers may not, when they need an additional heeling machine, be prepared to change over all their machines and substitute the entirely different model B heelers, and, accordingly, when they need an additional machine they order the Lightning machine. That machine is also preferred and probably will be preferred for an indefinite period by those manufacturers who prefer to attach heels while the shoe is bottom side up. In the new loading and attaching machine, McKay automatic heel, model B, which for convenience I shall hereafter refer to as the model B machine, the heel is attached while the shoe is right side up, and some manufacturers believe that their operators cannot observe the heel-attaching operation so satisfactorily while the shoe is in that position, that is, with the sole and heel on the under side of the shoe. It also seems probable that in view of the reorganization of the Lightning heeler, making that machine entirely automatic in its operation, there will continue to be a substantial demand for that machine particularly from manufacturers who wish to attach their heels while the shoe is bottom side up, but the large majority of manufacturers will prefer the model B machine because it has a substantially increased capacity over the Lightning heeler.

The production of the model B machine is the result of a long period of experimenting which began even before the formation of the United Company and has been carried on practically continuously by its inventors ever since, in the endeavor to produce a machine for attaching the heels of welt shoes which would apply automatically the preliminary heel-measuring pressure to the heel and shoe. Those efforts have been mainly directed toward producing an entirely automatic machine on the lines of the loading and attaching machine, McKay automatic heel, which, as has been explained, is the standard heel-attaching machine put out by the United Company for attaching the heels of McKay sewed shoes. The reason for the desire to produce a welt heel-attaching machine

on the lines of the loading and attaching machine, McKay automatic heel, was that that machine on McKay work had a very large capacity, and it was anticipated that a similar increased capacity could be secured for the machine when used upon welt work if it should prove possible to organize the machine for that work.

The model B machine, first put out for commercial use in November, 1910, was produced as the result of this long period of experimenting and was the first machine ever used commercially which would automatically apply the preliminary heel-measuring pressure. By this machine was solved for the first time the great problem with which inventors had dealt for over a dozen years, of securing an automatic preliminary heel-measuring pressure in such a manner that the final pressure upon the heel would not break the last.

The commercial construction of this new model B heeler is not shown in any patent which has as yet been granted, but the organization of the machine is set forth in broad terms in a number of patents to which I will now refer.

One of these patents defines in numerous claims the organization of the machine by which the final positive pressure of the heel and shoe to hold them properly pressed together during the driving of the nails is effected independently of the operation of the nail-driving mechanism. This patent is No. 1,000,119, August 8, 1911, Pope and Elliott (application filed May 26, 1898). Typical claims of this patent are the following:—

"6. In a heel attaching machine a rigidly sustained shoe support, a nail block adopted to support a heel and having a series of driver passages, means for positively actuating said nail block for forcing the heel sustained thereon against a shoe upon said support, and compressing said heel, a series of drivers projecting at all times into the driver passages of the nail block, and means for moving said drivers while the nail block is substantially at rest, for driving nails through the heel and into the sole of the shoe."

"11. In a heel attaching machine, a nail block provided with driver passages, nail drivers arranged to project at all times into the passages of the nail block, means for positively actuating said nail block to compress the heel and means for thereafter actuating the drivers independently of the nail block to drive nails through the heel into the shoe."

In prior organizations of this type of machine the pressure effected by the nail block was imparted first yieldingly and then positively through connections with the driver-actuating spindle so that the maximum pressure on the heel and shoe was not exerted until the very end of the nail-driving operation. In the prior construction there was danger of sidewise displacement of the heel during the driving operation, but in the new organization of the model B machine all the pressure which the heel is to receive is imparted before the nail-driving operation begins, and danger of this lateral displacement is entirely obviated.

Further features of this improvement are defined in claim 11 of patent No. 958,282, May 17, 1910, Plant.

In recognition of the superior quality of work secured by nailing all kinds of heels by driving the heel-attaching nails at an inclination, as has been fully explained, this model B machine has, ever since it was first put out, been regularly organized for driving the attaching nails at an inclination to the tread face of the heel, and accordingly the machine always embodies the improvements defined broadly in the claims of patent No. 1,000,957, August 15, 1911, Bates, and also the improvements defined in the claims of patent No. 1,072,986, September 9, 1913, Pope (granted on an application filed January 12, 1911).

Both of these patents were discussed at length in my previous testimony relating to the Lightning heel-attaching machine. The product of the machine is defined in the claims of patent No. 834,-085, October 23, 1906, Taylor.

It is impracticable to discuss in any detail the improvements set forth in the claims of all the other numerous patents which are embodied in this model B heeling machine. Attention should, however, be called to the fact that this machine includes in its organization mechanism for taking nails from bulk, arranging them with their points all in the same direction, and presenting them in horseshoe shape outline as required for the heel-attaching operation. The improvements embodied in this organization are defined in the claims of seven patents which have been discussed in the previous testimony in regard to the loading and attaching machine,

McKay automatic heel. This model B machine also embodies the improvements broadly set forth in the claims of patent No. 694,656, March 4, 1902, Mayo, which, as has been previously explained, disclosed the first commercial machine comprising the organization with heel-nailing mechanism of means for taking from bulk the required number of nails and presenting them, all pointing the same way, properly located for the nail-driving operation.

Without referring in detail to any other patents, I will state that the model B heeling machine as now supplied to shoe manufacturers embodies improvements set forth in the following eighteen patents:—

- No. 571,931, November 24, 1896, Raymond *et al.*
- No. 577,241, February 16, 1897, Elliott and Glidden.
- No. 589,501, September 7, 1897, Glidden.
- No. 611,370, September 27, 1898, Winter.
- No. 694,656, March 4, 1902, Mayo.
- No. 707,136, August 19, 1902, Mayo.
- No. 707,137, August 19, 1902, Mayo.
- No. 707,138, August 19, 1902, Mayo and Elliott.
- No. 707,143, August 19, 1902, Lougee.
- No. 884,513, April 14, 1908, Mayo.
- No. 884,524, April 14, 1908, Pope.
- No. 958,281, May 17, 1910, Plant.
- No. 958,282, May 17, 1910, Plant.
- No. 1,000,119, August 8, 1911, Pope and Elliott.
- No. 1,000,957, August 15, 1911, Bates.
- No. 1,005,303, October 10, 1911, Pope.
- No. 1,030,654, June 25, 1912, Elliott (application filed March 13, 1902).
- No. 1,072,986, September 9, 1913, Pope (application filed January 12, 1911).

While the actual number of shoes operated upon by the model B heeling machine and the Lightning healer vary somewhat, as is the case with nearly all shoe machines, according to the skill of the operator and according to the number of hours that he works in a day, a fair estimate of the comparative outputs of the two machines

is that when the Lightning heeler and the model B machine are run under the same conditions and by the same operator, the model B machine will show an average capacity exceeding that of the Lightning heeler by over twenty per cent.

#### NAILING MACHINE: ALPHA WOOD HEEL.

Another machine supplied by the United Shoe Machinery Company for attaching is the machine known officially as "Nailing Machine, Alpha Wood Heel", which was first put out in 1907 in response to a limited demand from shoe manufacturers for a machine to attach wooden heels. Before the introduction of this machine wooden heels had always been attached by hand. The machine is not shown in any patent which has as yet been granted, but is shown in the drawings and described in the claims of a pending application filed August 1, 1907.

All of the heelng machines which have been discussed, loading and attaching machine, McKay automatic heel, nailing machine, American Lightning, loading and attaching machine, McKay automatic heel, model B, and nailing machine, alpha wood heel, are put out by the United Company through its heelng department.

#### SLUGGING MACHINE: UNIVERSAL.

Subsequently to the securing of heels by the insertion of the heel-attaching nails it is the general practice to perform another fastening inserting operation upon the heel of the shoe. This is the operation known as "slugging". Slugs are short fastenings, usually of metal, which are driven through the toplift, that is, the outer lift of the heel, and through one or two of the heel lifts adjacent to the toplift. The utility of these slugs is to assist in holding the toplift to the body of the heel and to add to the wear-resisting qualities of the heel, particularly the toplift. Slugs are also ornamental and, accordingly, are frequently arbitrarily shaped to increase the ornamental effect. The standard commercial machine offered to manufacturers by the United Shoe Machinery Company for performing this slugging operation is known as "Slugging Machine, Universal".

Defendants' Exhibits numbered 13, 109, 110 and 121 are provided with heels which have been operated upon by the Universal slugging machine, and which illustrate some of the different ways in which it is the practice to arrange these slugs.

The machine as it is now constructed and supplied to manufacturers is described in the claims of the following patents: —

- No. 582,579, May 11, 1897, Cutter.
- No. 582,580, May 11, 1897, Cutter.
- No. 765,650, July 19, 1904, Casgrain.
- No. 786,190, March 28, 1905, Casgrain.
- No. 1,017,381, February 13, 1912, Casgrain.
- No. 1,040,273, October 8, 1912, Casgrain.

In addition to the patents on the above list which set forth mechanisms which are now, and have been for a number of years, incorporated in all the machines, the machine is especially equipped with various improvements adapting it for special kinds of work which, together with the patents directed to these improvements, will be discussed later.

The commercial machine is constructed substantially as shown in patent No. 786,190, March 28, 1905, Casgrain.

Referring now to such of the patents on the above list as set forth the more striking characteristics of the organization of the Universal slugging machine, typical claims of patent No. 582,579, May 11, 1897, are 23 and 24: —

"23. In a nailing machine, a stock support, a starting and stopping mechanism, a driving shaft, mechanism operated by said shaft to periodically depress said support to permit the feeding of the stock, and independent means controlled by said starting and stopping mechanism to finally depress the horn when the machine is stopped, for the purpose set forth.

"24. In a nailing machine, a stock support, a starting and stopping mechanism, a driving shaft, connecting mechanism between said support and shaft to periodically depress said support to allow the feeding of the stock, a mechanism connected to the starting and stopping mechanism independent of the nail driving mechanism, operating on said support and governed by the starting and stopping mechanism of the machine respectively to raise and lower said support when the machine is started or stopped, and a device controlling said independent mechanism and preventing its opera-

tion on said support until such time as will insure the complete operation of the machine, for the purpose set forth."

The object of the mechanism defined in the claims above quoted is to relieve the operator of the burden of frequently depressing the work-support treadle to permit frequent changes in the location of the work upon the work support. Such depression of the horn, to permit change in the work, is frequently required several times during the slugging operation upon most heels.

Furthermore, this mechanism gives a final depression to the work support when the machine stops, without the necessity of the operation of the work-support treadle against its very strong spring, which must be strong enough to sustain the shoe against the blow of the driver in the slug-inserting operation. It is believed that a slugging machine would not be acceptable to manufacturers, and particularly to operators, which did not embody the improvements set forth in the claims above quoted from patent No. 582,579, and which is also defined in claim 1 of patent No. 582,580, which is as follows: —

"1. A stock support movable up and down, a driving shaft, a cam on said shaft driven thereby, and connections between said cam and stock support operated by said cam, whereby the support is automatically raised by the first movement of the driving shaft when the machine is started and held in its raised position until the machine is stopped, for the purpose set forth."

As already stated, the commercial machine is constructed substantially as shown in patent No. 786,190, March 28, 1905, Casgrain, of which typical claims are the first and the sixth: —

"1. In a machine of the class described, a main shaft, mechanism for inserting fastenings, a clutch and a brake, means governed by rotation of said shaft to effect release of the clutch, operating devices actuated from the main shaft and arranged to derive their final movement from the main shaft after release of the clutch, whereby the momentum of said shaft is taken up and utilized prior to application of the brake, and means to maintain the brake in inoperative position until after such utilization of the momentum to prevent shock as the machine is stopped."

"6. In a nailing machine, a horn, a main shaft, means, including a governing member, operated by said shaft, to periodically depress the horn for feeding the work, and a device between said shaft and

said governing member, to give to the latter an additional movement and thereby impart to the said horn a final depression when the machine is stopped."

The first successful mechanism ever used in the shoe industry for holding and delivering wire for the operation of machines for inserting slugs, or any type of metallic fastening, is shown in the drawings substantially as used in this machine and set forth in all of the nine claims of patent No. 765,650, July 19, 1904. A typical claim of this patent is the first:—

"1. In a device of the class described, a support, having a bearing, and a reel, adapted to receive a coil of wire or like material, suspended at its upper part from said bearing, and being out of contact with said support or bearing except at the upper part of the reel, said reel being arranged to rotate freely upon the bearing in substantially a horizontal plane as said material is drawn off, whereby twisting of the material is avoided."

It may be of interest, as bearing upon the importance of the mechanism set forth in this patent No. 765,650 to note that the mechanisms set forth in all of the nine claims of this patent have been embodied in machines made by the Duplessis Shoe Machinery Company and in several different types of machines, including the slugging machines, which were built by Thomas G. Plant.

When the Universal slugging machine is used for slugging the heels of welt shoes, it is provided with improvements defined in nearly all of the twenty-seven claims of patent No. 919,421, April 27, 1909, Cuff. A typical claim of this patent is the second:—

"2. The combination with a sustaining bed, of a jack spindle having a tipping movement in one direction and provided with a foot having a curved under side resting on said bed upon which the spindle may rock in another direction, the contour of said curve being such that the upper end of the spindle will move in a substantially horizontal plane during the normal operative movement of the spindle."

A typical claim of patent No. 1,017,381, February 13, 1912, Casgrain, several claims of which define improvements embodied in the Universal slugging machine, is the seventh:—

"7. In an apparatus of the class described, wire feeding devices, an elongated fixed guide below them, a fixed and a movable cutter,

to sever the wire, a bodily movable guide for the wire located adjacent to cutters, and a sliding support on which the movable cutter is mounted, said guide moving with the wire when the latter is engaged by the cutters to relieve the strain upon the latter."

The gauge for performing the important function of causing proper location of the slugs in relation to the edge of the toplift is as embodied in the commercial machine set forth in all of the eleven claims of patent No. 1,040,273, October 8, 1912, Casgrain. A typical claim is the first :—

" 1. A two way gauge comprising, in combination, a gauge slide, eccentric means through which said slide may be moved to and fro longitudinally between limits determined by the eccentricity of said means, and means for determining other limits between which said slide may be freely moved, comprising co-operating stops one of which is fixed and the other of which is adjustable about the axis of turning of said eccentric means into different angular relations to said means to determine different limits for the effective free movement of said means."

When the Universal slugging machine is used for slugging spring heeled shoes it is provided alternatively with a work-supporting mechanism shown and set forth in the claims of patent No. 609,-874, August 30, 1898, Casgrain, or No. 705,512, July 22, 1902, Casgrain.

This machine is put out by the United Shoe Machinery Company through its metallic department.

#### SLUGGING MACHINE: NO. 5 (ZIZ).

Since 1900 the United Shoe Machinery Company has carried on experimenting, which has been practically continuous, in the effort to produce an entirely new slugging machine which would have a greater capacity than the Universal slugging machine, and since the organization of the company no less than seven different experimental machines have been constructed in the course of this experimenting. The experimental work upon the most promising of these machines began in 1902, and has been continuously carried on since then and is still going on. In the course of this experimental work there was built an experimental machine substantially as shown in patent No. 1,012,811, December 26, 1911, Casgrain,

and a machine substantially as shown in that patent was tried out in a shoe factory in February, 1905. A second experimental machine on similar lines, which was constructed substantially as shown in patent No. 1,054,173, February 25, 1913, Casgrain, was built and was tried out in a shoe factory for several months early in 1907. It is found that this machine, while it operated satisfactorily under the eyes of one of the company's experts, could not be depended upon to operate with commercial success under usual factory conditions and when operated by the average operator. It was decided, therefore, that this experimental machine was not even an approximation of a commercial machine, and after it had been used experimentally for a few months it was sent back to the company's factory for further experimental work. As a result, late in that year, 1907, another experimental machine was put into a shoe factory for a trial under commercial conditions. This machine proved sufficiently promising during its experimental use, so that after some months of this trying out under commercial conditions it was decided to build a number of additional machines in order that the machine might be tried out in a number of different factories on different classes of work. Accordingly, fourteen of those machines were constructed and were put out from 1909 to 1913. The company's experts were at that time very optimistic as to the future of this machine, because although the machine was giving considerable trouble from time to time, that is only the usual experience at such a stage of the development of an entirely new machine, and it was confidently believed that the difficulties being encountered in the use of the machine could all be overcome in time. Those fourteen machines were run regularly at an average speed of about 700 slugs per minute as compared with a maximum commercial speed of 375 for the Universal slugging machine, and the new machine had been run at the company's factory at a speed of 1500 slugs per minute.

The problems which had been encountered in the use of the experimental machines were not overcome as anticipated, and, although the machine has been for several years almost within sight of commercial success, the company's experts and inventors have

not yet been able to get the organization of the machine into such condition that the machine could be satisfactorily used by the average operator under commercial conditions. Whether or not the machine will ever become commercially successful is still problematical. Considerably over \$100,000 has been spent already in the experimental work upon this machine. The patents which set forth in their claims the organization of this machine in its present form, and as it is now being operated under commercial shoe factory conditions, are as follows:—

- No. 582,579, May 11, 1897, Cutter.
  - No. 582,580, May 11, 1897, Cutter.
  - No. 601,255, March 29, 1898, Horton.
  - Reissue 11,962, January 21, 1902, Freeman (original patent January 24, 1899).
  - Reissue 12,820, June 23, 1908, Preston (original patent May 15, 1906).
  - Reissue 12,821, June 30, 1908, Preston (original patent June 5, 1906).
  - No. 691,354, January 21, 1902, Casgrain.
  - No. 714,572, November 25, 1902, Freeman.
  - No. 809,160, January 2, 1906, Wingo.
  - No. 978,297, December 13, 1910, Keith.
  - No. 998,043, June 27, 1911, Ambler.
  - No. 1,000,490, August 15, 1911, Buckminster.
  - No. 1,001,815, August 29, 1911, Casgrain.
  - No. 1,002,864, September 12, 1911, Perry.
  - No. 1,004,240, September 26, 1911, Casgrain.
  - No. 1,005,920, October 17, 1911, Ambler.
  - No. 1,006,533, October 24, 1911, Casgrain.
  - No. 1,012,811, December 26, 1911, Casgrain (application filed February 16, 1906).
  - No. 1,030,829, June 25, 1912, Preston (application filed August 3, 1905).
  - No. 1,053,479, February 18, 1913, Casgrain (application filed September 12, 1908).
- This machine is of a radically different type from any machine

for inserting fastenings or slugs ever before used. The character of the organization of the machine may be indicated by quoting typical claims from reissue patent No. 12,821 and patent No. 1,053,-479, both of which are enumerated in the above list. Claim 19 of reissue 12,821 is as follows:—

"19. A machine of the character described comprising, in combination with a work support, a movable carrier and a pair of opposed severing jaws mounted thereon and adapted to move simultaneously towards a strip of fastening material located between them, means for presenting said strip in a predetermined line of drive, and means for actuating said carrier and jaws to cause the latter to grip said strip, drive it into the work and completely sever said strip immediately at the end of the driving operation to form a fastening."

The third claim of patent No. 1,053,479, which contains 183 claims setting forth mechanisms embodied in this machine, is as follows:—

"3. In a machine for inserting fastenings, the combination with a pair of cutters constructed and arranged to grip a strip of fastening material, insert the end thereof into a piece of work and sever a portion of said strip to form a fastening, of means for controlling positively and continuously the operations of said cutters."

Without attempting to discuss in detail any of the mechanisms set forth in others of the patents enumerated on the above list, attention should be called to one feature of the organization of this machine which is of striking novelty and which will undoubtedly be incorporated in any high-speed slugging machine which the company may develop. This consists in means for automatically stopping the insertion of the slug at the proper point adjacent to the breast of the heel. Unlike the operation of most fastening inserting machines it is of great importance that the line of slugs shall terminate at the proper point in relation to the breast of the heel as the slugs are prominent in the finished shoe. At such speed as that at which this experimental machine has regularly been run, it probably would be impossible for the operator to stop the machine within one or two slugs of the proper stopping point. Accordingly the experimental machine has been provided with an automatic organization for stopping the machine at exactly the proper point

in its operation. This organization is defined in the claims of patent No. 1,006,533, October 24, 1911, Casgrain, and patent No. 1,053,-479, February 18, 1913, Casgrain. A typical claim directed to this organization is claim 142 of patent No. 1,053,479, which is as follows :—

"142. In a machine for inserting fastenings, the combination with fastening inserting mechanism and a source of fastening supply, of automatic means governed by the contour of the work for causing the insertion of fastenings to be discontinued at a predetermined distance from the end of the work."

In view of the doubt as to the ultimate commercial success of the experimental machine which I have been discussing, which has been known successively as the "Ziz Slugging Machine" and as the "Slugging Machine No. 5", the company has for some time had inventors engaged in experimental work with a view to the production of a new machine on entirely different lines from that of the Universal slugging machine or of the slugging machine No. 5. This experimental work is being carried on on two different lines, with the object of producing two differently organized machines which will be tried out together under commercial conditions with a view to the selection and commercial adoption of the machine which proves most satisfactory.

#### HEEL BREASTING MACHINES.

A further operation which must be performed upon the heel before the work upon this part of the shoe is completed is the operation known as "heel breasting". The function of a heel-breasting machine is to remove from the forward end of the heel the surplus stock and form a smooth front or breast face on the front end of the heel. The operation is usually performed by a knife acting in a direction approximately perpendicular to the shank portion of the sole and cutting from the tread face of the toplift to the shank.

Prior to February, 1899, all heel breasting was done by foot-power machines, several types of which were supplied to manufacturers. These machines comprise, generally speaking, a knife and a shoe support which are moved relatively to each other by a

foot treadle, all the power required for forcing the knife through the successive layers of stock in the heel being applied by the operator through the treadle. The operation of this machine was a great tax upon the operator's strength, and prior to the formation of the United Shoe Machinery Company attempts had been made to develop a power-operated machine which should relieve the operator of the arduous task of operating the knife by his foot. The reason why the industry had waited so long for a power-operated heel-breasting machine is that all heels vary in height, even the heels of shoes which are intended to be substantially alike, and the breasting cut must, on the one hand, extend entirely to the shank of the shoe so as to sever completely the surplus stock which is to be removed, while on the other hand it is equally important that the knife shall not cut further than the shank of the sole and deface the sole by cutting into the shank.

No power-operated commercial machine had ever been devised until a machine was produced by the United Shoe Machinery Company which could deal successfully with the problem of cutting just far enough to sever completely the surplus stock and, at the same time, not cut far enough to deface the shank of the sole. Just prior to February, 1899, the McKay Shoe Machinery Company had been carrying on experimental work on a power-operated heel-breasting machine. This experimental work was carried on continuously by the United Company from the time of its formation until a successful commercial machine was produced. During 1900 and 1901 some fifty experimental machines were constructed and were put out into shoe factories, but none of the machines was commercially successful and none of them was operated at all after a few months' trial. Eventually all of these fifty machines were returned to the company's factory and were junked.

**HEEL BREASTING MACHINE — MODEL B: POWER.**

**HEEL BREASTING MACHINE — MODEL B: IMPERIAL.**

The difficulty with which the United Company's inventors were struggling was the problem of providing a mechanism which would be satisfactory for a shoe machine and for operation by the aver-

age shoe factory workman, which, at the same time, would be sufficiently delicate in its operation to suspend the operation of the power mechanism for operating the knife at just the right time to stop the knife as it reached the shank of the shoe and after it had traveled far enough to sever the surplus stock completely. In 1902 the machine was entirely redesigned and then became commercially successful for the first time. The redesigned machine was named "Heel Breasting Machine, Model B, Power". As it was then constructed the machine embodied mechanism set forth in the claims of patent No. 636,990, November 14, 1899, Heys, and No. 645,994, March 27, 1900, Brewer. Patent No. 636,990 defined broadly the principle of operation of the machine. Typical claims of this patent are the first and fourteenth:—

"1. A heel breasting machine comprising a shoe support, a knife, mechanism for forcing the knife positively or unyieldingly through the heel to the sole, and mechanism for automatically checking the movement of the knife when it has cut through the heel."

"14. A heel breasting machine comprising a shoe support, a movable knife, and mechanism for automatically driving said knife through a heel of any height to the sole, said mechanism including a bunter for limiting the movement of the knife, said bunter being arranged to engage the sole with a pressure less than that with which the knife engages the heel."

A typical claim of patent No. 645,994 is the fourth:—

"4. A heel breasting machine comprising a work support, a carrier positively reciprocated toward and from the support, a knife holder located between the carrier and support and having a breasting knife, a toggle connecting carrier and knife holder, an adjustable stock on the knife holder adapted to support toggle against a braking movement in one direction, and automatic means for imparting the braking movement in the opposite direction to said toggle."

The machine was greatly improved in 1903 when the mechanism for arresting the movement of the knife when it reached the shank of the shoe was recognized. This improvement is set forth in the claims of reissue No. 13,413, April 30, 1912, Waterman (original patent No. 738,502, September 8, 1903).

With the incorporation in it of the improvements set forth in

this Waterman reissue patent the machine became immediately successful and 229 machines were put out during the company's fiscal year ending March 1, 1904. A typical claim of reissue No. 13,413 is the twentieth:—

"20. A heel breasting machine, having, in combination, an actuator having a constant stroke, a knife carrier arranged for movement parallel therewith, rotatable means mounted upon said carrier on an axis transverse to the direction of movement of the carrier and arranged in the part of a portion of said actuator for movement of the carrier by the actuator, said means being constructed and arranged to clear said other part when permitted to rotate, means normally restraining said rotatable means from rotation, and shoe engaging means carried by the carrier arranged to release said rotatable means when the motion of said shoe engaging means is stopped."

About January, 1906, the name of this machine was changed to "Heel Breasting Machine, Model B, Imperial."

To meet peculiar conditions in the Philadelphia territory and to supply a demand from manufacturers in that territory for a machine for breasting small shoes on lasts which varied greatly in height, a reorganized machine was constructed and supplied to those manufacturers in 1908, and since that time, which is constructed as shown in the drawings and set forth in all of the twenty-four claims of patent No. 1,068,423, July 29, 1913, Frasier (original application filed October 20, 1908). Typical claims of this patent are the third and sixteenth:—

"3. A heel breasting machine having, in combination, a reciprocating breasting knife arranged to be driven the same distance at each stroke, a support for sustaining a shoe with its heel in the path of the breasting knife arranged for movement manually in the line of motion of the knife, and a stop constructed for adjustment to definite distances from the limit of movement of the knife and arranged to be engaged by the tread surface of the heel to limit movement of the shoe toward the knife, the said stop being stationary during the cutting stroke of the knife."

"16. In a machine of the class described, a knife having a definite lower limit of movement manually, means adjacent the shoe for positively elevating the shoe to bring the tread surface of its heel to a predetermined distance from said limit, and means engaging the heel to receive the thrust of said elevating means."

An organization of this machine which enables it to breast spring heels is set forth in all of the ten claims of patent No. 1,023,284, April 16, 1912, Warren (application filed July 8, 1911). Without taking time to quote a claim, I will state that the fourth claim is typical.

To adapt the machine for peculiar conditions attending its operation upon extremely crooked lasts, an improvement was adopted in 1910 which is set forth in the claims of a pending application.

The method which is practiced in the making of the peculiarly shaped knives for use upon this power heel-breasting machine is defined in the claims of a pending application.

On October 1, 1913, over 1600 of these machines had been put out by the United Company through its general department. The capacity of the machine is from 1500 to 2500 pairs per day, according to the class of work.

**Mr. WEBSTER.** Please note the petitioner's objection to the foregoing answer, especially to all testimony or statements therein relating to patents issued since the filing of the petition herein; to all testimony relating to pending applications for patents or to constructions shown in pending applications; to all statements of the witness as to what others said, thought, or did; to all reference to experimental machines, to all expressions of opinion of the witness, to all that portion of the answer as is argumentative, and to all testimony before the Special Examiner not in defence of the evidence introduced by the petitioner before the examiner; all said objections being on the ground that all such testimony and evidence is incompetent, irrelevant and inadmissible and as having no bearing on the issues involved in this cause, and especially as having no reference to the matters referred to in the order for taking testimony before the Special Examiner. And notice is hereby given that counsel for the petitioner will hereafter file a motion to strike such testimony and evidence from the records, which motion will specifically point out the matters objected to.

*Int.* 81. Have you collected under one or more covers the several patents referred to by you in your answer to the last question.

as relating to machines for manufacturing and attaching heels to boots and shoes?

*Ans.* Yes, sir; and I produce a collection of the patents referred to in the portion of my testimony relating to heel-compressing machines.

[*Volume of patents relating to heel-compressing machines is offered in evidence, and marked "Defendants' Exhibit 162".*]

Mr. WEBSTER. Please note petitioner's objection to the introduction of patents dated after the filing of the petition herein as incompetent, inadmissible and irrelevant and having no bearing on the questions involved in this cause, and especially as having no bearing on the matters submitted before the examiner.

[*Answer to Int. 81 continued:*]

I also produce a collection of patents referred to in the portion of my testimony relating to loose-nailing machines.

[*Volume of patents referring to loose-nailing machines is introduced in evidence, and marked "Defendants' Exhibit 163".*]

[*Answer to Int. 81 continued:*]

I also produce a collection of the patents referred to in that portion of my testimony which dealt with heel-attaching machines.

[*Volume of patents referring to heel-attaching machines is introduced in evidence, and marked "Defendants' Exhibit 164".*]

[*Answer to Int. 81 continued:*]

I produce also a collection of the patents named in the portion of my testimony relating to slugging machines.

[*Volume of patents relating to slugging machines is introduced in evidence, and marked "Defendants' Exhibit 165".*]

[*Answer to Int. 81 continued:*]

I also produce a collection of the patents referred to in the portion of my testimony relating to heel-breasting machines.

[*Volume of patents relating to heel-breasting machines is introduced in evidence, and marked "Defendants' Exhibit 166".*]

*Int.* 82. Will you please give the number, date and name of the patentee of the several patents referred to in the volume of patents just offered in evidence as Defendants' Exhibits 162, 163, 164, 165 and 166?

*Ans.*

EXHIBIT 162.

- No. 105,030, July 5, 1870, Bigelow.  
No. 350,051, September 28, 1886, Glidden.  
No. 543,804, July 30, 1895, Glidden and Small.  
No. 577,212, February 16, 1897, Small.  
No. 577,213, February 16, 1897, Small.  
No. 772,840, October 18, 1904, Small.  
No. 776,787, December 6, 1904, Leland.  
No. 776,823, December 6, 1904, Allen.  
No. 776,875, December 6, 1904, Tripp.  
No. 781,236, January 31, 1905, Small.  
No. 890,434, June 9, 1908, Mayo.  
No. 1,007,687, November 7, 1911, Glidden.  
No. 1,012,007, December 19, 1911, Pope (application filed July 6, 1909).  
No. 1,012,681, December 26, 1911, Mayo (application filed February 20, 1907).  
No. 490,624, January 24, 1893, Goddu.  
No. 582,579, May 11, 1897, Cutter.  
No. 856,399, June 11, 1907, Eaton.  
No. 865,329, September 3, 1907, Casgrain.  
No. 886,313, April 28, 1908, Cutter.  
No. 919,424, April 27, 1909, Cuff.  
No. 932,535, August 31, 1909, Casgrain.  
No. 1,011,941, December 19, 1911, Goddu (application filed May 10, 1910).  
No. 1,030,775, June 25, 1912, Goddu (application filed February 8, 1909).  
No. 1,031,438, July 2, 1912, Goddu (application filed October 10, 1907).  
No. 1,045,717, November 26, 1912, MacKenzie (application filed February 8, 1909).  
No. 1,045,784, November 26, 1912, Goddu (application filed February 8, 1909).

## EXHIBIT 164.

- No. 446,885, February 24, 1891, Pope.  
No. 584,752, June 15, 1897, Small.  
No. 599,012, February 15, 1898, Raymond.  
No. 694,656, March 4, 1902, Mayo.  
No. 707,136, August 19, 1902, Mayo.  
No. 707,137, August 19, 1902, Mayo.  
No. 707,138, August 19, 1902, Mayo and Elliott.  
No. 707,139, August 19, 1902, Mayo.  
No. 834,085, October 23, 1906, Taylor.  
No. 884,513, April 14, 1908, Mayo.  
No. 887,870, May 19, 1908, Taylor.  
No. 891,192, June 16, 1908, Small.  
No. 958,282, May 17, 1910, Plant.  
No. 958,302, May 17, 1910, Plant.  
No. 1,000,119, August 8, 1911, Pope and Elliott.  
No. 1,000,957, August 15, 1911, Bates.  
No. 1,030,654, June 25, 1912, Elliott (application filed March 13, 1902).  
No. 1,072,986, September 9, 1913, Pope (application filed January 12, 1911).

## EXHIBIT 165.

- No. 582,579, May 11, 1897, Cutter.  
No. 582,580, May 11, 1897, Cutter.  
No. 601,255, March 29, 1898, Horton.  
Reissue No. 11,962, January 21, 1902, Freeman (original patent No. 618,082, January 24, 1899).  
No. 609,874, August 30, 1898, Casgrain.  
No. 691,354, January 21, 1902, Casgrain.  
No. 705,512, July 22, 1902, Casgrain.  
No. 714,572, November 25, 1902, Freeman.  
No. 765,650, July 19, 1904, Casgrain.  
No. 786,190, March 28, 1905, Casgrain.  
No. 809,160, January 2, 1906, Wingo.  
Reissue No. 12,820, June 23, 1908, Preston (original patent No. 820,670, May 15, 1906).

Reissue No. 12,821, June 30, 1908, Preston (original patent No. 822,867, June 5, 1906).

- No. 919,424, April 27, 1909, Cuff.
- No. 978,297, December 13, 1910, Keith.
- No. 996,043, June 27, 1911, Ambler.
- No. 1,000,490, August 15, 1911, Buckminster.
- No. 1,001,815, August 29, 1911, Casgrain.
- No. 1,002,864, September 12, 1911, Perry.
- No. 1,004,240, September 26, 1911, Casgrain.
- No. 1,005,920, October 17, 1911, Ambler.
- No. 1,006,533, October 24, 1911, Casgrain.
- No. 1,012,811, December 26, 1911, Casgrain (application filed February 16, 1906).
- No. 1,017,381, February 13, 1912, Casgrain (application filed October 24, 1898).
- No. 1,030,829, June 25, 1912, Preston (application filed August 3, 1905).
- No. 1,040,273, October 8, 1912, Casgrain (application filed October 24, 1898).
- No. 1,053,479, February 18, 1913, Casgrain (application filed September 12, 1908).
- No. 1,054,173, February 25, 1913, Casgrain (application filed September 5, 1907).

#### EXHIBIT 166.

- No. 636,990, November 14, 1899, Heys.
  - No. 645,994, March 27, 1900, Brewer.
  - No. 738,502, September 8, 1903, Waterman.
  - Reissue No. 13,413, April 30, 1912 (application filed October 18, 1904).
  - No. 1,023,284, April 16, 1912, Warren (application filed July 8, 1911.)
  - No. 1,068,423, July 29, 1913, Fraiser (application filed October 20, 1908).
- Int.* 83. What is the function of the insole as a part of the organization of a boot or shoe, and what is meant by a "reinforced" insole?

Mr. WEBSTER. In view of the fact that no testimony in reference to insoles was introduced by the petitioner before the examiner, counsel for petitioner objects to the question as calling for matter not admissible at this stage of the proceedings.

*Ans.* The insole is that part of the shoe to which, in the lasting operation, the upper is secured during the shaping of the upper to the last. In a later stage of the manufacture of the shoe the out-sole is secured to the insole, either directly by stitching the out-sole to the insole, as in a McKay sewed shoe, or securing it by pegs or metallic fastenings, as in a pegged or nailed shoe, or indirectly through the welt, as in a welt shoe.

An insole for a McKay shoe requires no preparation other than giving it a shape corresponding with the shape of the bottom of the last. This is because the out-sole of a McKay sewed shoe is attached directly to the insole by a through-and-through stitch. Owing to this fact that the out-sole of a McKay sewed shoe is secured by a stitch passing entirely through the insole, the insole for the McKay sewed shoe requires no preparation to enable it to receive the stitch, and it may be of comparatively cheap and thin stock and still afford ample holding power for the chain stitch seam which secures the out-sole to the insole. In the welt shoe, on the other hand, the out-sole is secured to a welt, this being the only means of attachment of the out-sole to the shoe. The welt must previously, together with the upper, be sewed to the insole and in attaching the welt and the upper to the insole the line of stitching cannot pass through the insole, and the stitch depends for its holding power upon a narrow portion of stock on the flesh side of the insole which is known as the "between substance". In an all-leather insole this "between substance" is the narrow strip of stock between a lip which is formed on the outer edge of the insole by a cut approximately parallel with the face of the flesh side, and another cut made in the flesh side of the stock from a line somewhat removed from the edge, which cut is directed outwardly toward the edge of the sole. A "reinforced" insole is an insole which has had applied to its flesh side a piece of reinforcing fabric, usually canvas. In preparation for the application of the fabric a

lip or lips on the flesh side of the insole are turned up into a position approximately perpendicular to the flesh side of the sole, and the reinforcing fabric is applied while the lip or lips occupy this approximately perpendicular position.

*Int.* 84. What type of reinforced insole was in most extensive practical use in 1899, and what machines were put out for making such insoles? What development has been made in the reinforced insole art since 1899, and in machines for making reinforced insoles? If the insoles are the subjects-matter of patents of the United Shoe Machinery Company, state the patents; and if the machines embody mechanisms shown and described in Letters Patent of the United Shoe Machinery Company, state the patents.

Mr. WEBSTER. The same objection repeated.

#### GEM INSOLE.

*Ans.* Shortly before 1889 there was being used commercially a reinforced insole known as a "Gem" insole. This was the first successful insole of this character devised for the purpose of providing an insole which would be as satisfactory in the manufacture and wear of a shoe, or even more satisfactory, than an all-leather insole, which, owing to the requirements which I indicated in the preceding answer, had to be made of expensive leather of good quality. It was found that by forming a lip by cutting into the edge of the sole a short distance and turning up the lip thus formed, and then applying reinforcing material to the entire flesh side of the insole, the reinforcing material over the lip upturned from the flesh side of the leather blank, an insole could be produced which would be less expensive than a leather insole, which could be used for the same class of work, and would, in fact, be more satisfactory in the wear of the shoe. An insole of this type was known as the "Gem" insole, which was first used in 1898. This insole as commercially used in 1899, and as still used, is illustrated in patent No. 575,460, January 19, 1897, Cole. There were supplied to manufacturers for producing this Gem insole several machines which comprised the so-called "Gem System", to which I will briefly refer before specifically explaining the insole and several machines for producing it.

The machine for turning up and setting the lip of the leather blank is known as the "Turning Machine, Gem Lip", and the commercial machine is constructed substantially as shown in patent No. 638,010, November 28, 1899, Hadaway. That machine is now being superseded by the "Turning and Slashing Machine, Goodyear Lip", which is shown and described in a pending application.

The machine known as the "Flexible Insole Gem" is the machine which is used for applying the reinforcing canvas to the Gem insole and for shaping it to the upturned leather lip, and is shown substantially in its commercial form in patent No. 614,860, November 29, 1898, Hadaway.

Referring now more in detail to the patents owned by the United Shoe Machinery Company which relate to the Gem insole and to the machines above enumerated for making the insole, the Gem insole itself is defined in the claims of patent No. 575,460, January 19, 1897, Cole, which is as follows:—

"As an improved article of manufacture, an insole comprising a body of leather, a lip and feather formed by splitting the outer edge of the body in the usual manner, and a continuous reinforcing covering secured to the central portion of the bottom of the sole, indented over the lip, and terminating upon and secured to the bottom of the feather upon opposite sides of the sole, substantially as described."

I produce a Gem insole such as is defined in the above claim.

[*Gem insole is offered in evidence, and marked "Defendants' Exhibit 167".*]

[*Ans. to Int. 84 continued:*]

The machine for turning up the lip which is formed, as stated in the claim of patent 575,460, by "splitting the outer edge of the body in the usual manner", is known as "Turning Machine, Gem Lip", and embodies mechanisms defined in the claims of the following patents:—

No. 610,326, September 6, 1898, Keith.

No. 623,306, April 18, 1899, Coupal and Gordon.

No. 638,010, November 28, 1899, Hadaway.

Of the above patents, No. 638,010 shows in the drawings and describes in its specifications the machine substantially as con-

structed for commercial use. The improvements which are set forth in the claims of this patent are those which made the machine commercially successful. A typical claim of this patent No. 638,-010 is the first :—

"1. In a lip turning machine, the combination with a reciprocating lip setting tool, of means to so actuate said tool and to support the work so as to cause said tool to strike and act upon the lip at the base thereof within the angle formed by the lip and feather of the insole, substantially as described."

It is important that the leather lip of the insole be raised into a position substantially perpendicular to the face of the insole because, first, it must be in this position in order that the reinforcing canvas shall be applied to it properly; and secondly, because after the canvas has been applied to the bottom of the insole it is necessary that the reinforced lip shall be perpendicular to the face of the insole in order that the upper stock may be properly lasted into the angle of union between the lip and the feather edge, that is, the portion of the stock between the shoulder formed by the lip and the extreme edge of the sole. It is further important that this angle formed by the lip and the feather edge shall be clearly defined so that the upper stock can be lasted into it properly, and later that the welt and the upper may be properly attached to the lip in the inseam-sewing operation. It was a difficult problem to raise this lip and make it stand in this substantially vertical position, owing to the tendency of the lip to turn backward toward the face of the sole. The improvement of this Hadaway patent No. 638,010, November 28, 1899, provided for the first time an organization for a lip-turning machine which would make this leather lip stand up permanently in the desired perpendicular position and which would sharply define the angle of union between the lip and the feather edge.

Improvements which are embodied in the commercial machine are also defined in broad terms in the four claims of patent No. 610,326, September 6, 1908, Keith, of which typical claims are the first and third :—

"1. In a lip turning machine, the combination with a lip turn-

ing plow and a lip setting roll located adjacent thereto, of a work support arranged to hold the work against said plow and roll, the lip setting roll being inclined relatively to the surface to the work support, substantially as described."

"3. In a lip turning machine, the combination with a lip turning plow and a lip setting roll arranged adjacent to and following the plow, of a work support rotating in a horizontal plane and a rotating feed wheel arranged to enter the angle between the feather and lip of the sole, substantially as described."

This Gem lip-turning machine also embodies improvements set forth in claim 2 of patent No. 623,306, April 18, 1899, Coupal and Gordon.

#### TURNING AND SLASHING MACHINE: GOODYEAR LIP.

In the use of this Gem lip-turning machine it was found that frequently after the operation of the machine the portions of the lip which had been turned up in sharply curved shanks between the ball and the middle of the shank would not always remain in the desired perpendicular position, owing to the fact that in turning up the lip the edge of the lip had been forced into a curved line of larger radius than the curved line in which the edge of the lip had been located before it was turned up, and there was a constant tendency for the lip to return from the desired perpendicular position to its original condition. It was, accordingly, the practice of the operator, when he observed this tendency of the lip to turn back toward the body of the insole, to slash the lips at two or more points in the shank by a hand knife and relieve the strain on the lip occasioned by the stretching of its edge. With a view to producing a lip-turning machine which would perform this slashing operation, before performed by hand, the United Company, in January, 1909, started experimental work with the object of producing a reorganized machine in the operation of which the lip could be slashed whenever desired, as in the shank, while the lip-turning operation was progressing. This experimental work resulted in the production of a machine by which, as the operation of the machine was proceeding around the insole, the operator could by depressing a treadle render operative automatic mechanism for cutting a vertical slit through the lip, from the tip of the

lip to its base, thus overcoming the tendency of the lip to swing back out of vertical position by relieving the stretching strain on the top edge of the lip. This machine was developed into a commercial form and first put out for commercial use in January, 1912. It is organized to perform mechanically the operation previously performed by hand, as has been described. This machine embodies the improvements defined in the three patents already mentioned, Nos. 610,326, 623,306 and 638,010, but the reorganized machine is not shown in its commercial form in any granted patent, but is shown in drawings described in the specification and set forth in the claims of a pending application filed on March 3, 1911.

#### FLEXIBLE INSOLE MACHINE : GEM.

The machine of the Gem system which applies the reinforcing material to the insole, which is known as the "Flexible Insole Machine, Gem", embodies mechanism set forth in the claims of the following patents :—

No. 603,763, May 10, 1898, Hadaway.

No. 609,103, August 16, 1898, Keith.

No. 609,110, August 16, 1898, Milner.

No. 614,860, November 29, 1898, Hadaway.

The commercial machine is constructed substantially as shown in the drawings of patent No. 614,860.

In the manufacture of the Gem insole, after the lip has been turned up by the Gem lip-turning machine an oblong strip of canvas previously cemented is roughly applied by hand to the flesh side of the insole, that is, the side on which the lip has been formed, and this oblong strip is necessarily of such size that there is more or less excess canvas extending beyond the margin of the insole all around the insole except at the heel end, which does not need reinforcing since the inseam by which the welt and upper are secured to the insole terminates on each side at a point located approximately at the forward or breast end of the heel in the finished shoe. The general object of the reinforcing machine is to crimp the canvas so that it will fit closely over the lip of the leather blank, and particularly so that it shall fit in the angles formed on

both sides of the lip at the junction of the lip and the body of the insole on the inside and the feather edge on the outside.

The machine shown in patent No. 603,763, May 10, 1898, Hadaway, was the first machine ever devised for reinforcing insoles, but the machine was a satisfactory commercial machine and was not put into commercial use. This patent, however, represents an important step in the development of the commercial machine and sets forth broadly in its claims mechanism which was embodied in the commercial machine. Typical claims of this patent No. 603,763, directed to the organization of the commercial machine, are 16, 18 and 21, which are as follows:—

"16. In a machine for applying reinforcing material to insoles, the combination with a work support, of bead forming tools and mechanisms to actuate said tools to cause them to form a bead or crimp in said reinforcing material, substantially as described."

"18. In a machine for applying reinforcing material to insoles, the combination with bead forming mechanism for forming the bead or crimp in the reinforcing material, of edge trimming mechanism for trimming the edge of said reinforcing material, substantially as described."

"21. In a machine for applying reinforcing material to insoles, mechanism operating automatically to form a bead or crimp in said reinforcing material, and to secure said reinforcing material to an insole, substantially as described."

One of the difficulties in the production of a commercially satisfactory machine for applying reinforcing material to an insole was due to the tendency of the cemented canvas to stick to the upper edge of the lip of the insole after it had been roughly applied by hand, as has been explained, and prior to and during the reinforcing operation. One of the important features of this reinforcing machine was the means incorporated in it for lifting the cemented canvas away from the lip just before and during the operation of the crimping means. The importance of this means for freeing the cemented canvas from the edge of the lip may be understood if it be explained that it is essential that the reinforcing material be forced properly into the angle on the inside of the lip formed between the lip and the bottom of the insole, and that it is also desirable that the reinforcing material be likewise crowded down

into the angle or the outside of the lip between the lip and the feather edge, and it would be practically impossible to get the reinforcing material properly into either of these angles unless the cemented canvas were freed from the upper edge of the lip, as otherwise, when the canvas was crimped into the angle on the inside of the lip it would pull the lip over with it, making it impossible to get the canvas properly into the inside angle and also impossible to complete the reinforcing operation by getting canvas properly into the angle on the outside of the lip. This problem was solved by the incorporation in the organization of the reinforcing machine, of the means to which I have referred for raising the canvas out of contact with the edge of the lip just before and during the crimping operation. This means, which is termed in the claims of the patent an "anvil or former", is defined in broad terms in seven claims of patent No. 603,763, May 10, 1898, Hadaway. Claim 26 is typical :—

"26. In a machine for applying reinforcing material to insoles, the combination with a beading or crimping tool of an anvil or former having a bead molding head projected therefrom, substantially as described."

All of the twelve claims of patent No. 614,860, November 29, 1898, Hadaway, define mechanisms embodied in the commercial machine. Among other improvements this patent defines an improved construction of under-forming mechanism which I have just discussed and which is defined broadly in the claim above quoted. This improved under-former of the commercial machine is set forth in a number of claims of this patent, of which a typical claim is the fifth :—

"5. In a machine for reinforcing insoles, the combination with a bead forming tool, of a former or anvil, and means to impart a vertical movement to the former or anvil toward and away from the working end of said tool, substantially as described."

This patent No. 614,860 also sets forth in its claims an improved organization of the tools which co-operate in the beading or crimping of the reinforcing material about the lip of the leather blank. Of these claims a typical claim is the first :—

"1. In a machine for reinforcing insoles, the combination with an anvil or former, of a plurality of bead forming tools, one of said tools being a fixed tool and another of said tools being movable toward and from the fixed tool, substantially as described."

The experimental machine shown in the drawings of patent No. 603,763, May 10, 1898, Hadaway, was provided with means for severing excess canvas projecting beyond the edge of the insole which comprised a fixed cutter and a reciprocating cutter co-operating with the fixed cutter. This combination would not cut the canvas cleanly enough and was also arranged to trim the canvas before it had been attached to the insole, so that the line of cutting could not be depended upon to follow the edge of the insole after the fabric had been secured to the feather edge. This organization was substantially improved by the mechanism shown in patent No. 609,103, August 16, 1898, Keith. This improved construction comprised overlapped rotary cutters, rotating in a vertical plane, which severed the excess canvas after the canvas had been cemented to the feather edge, and which also were organized to be held yieldingly against the edge of the insole so that they would operate to trim the excess exactly at the edge of the insole, as is desired.

This improvement is defined in the seventh and thirteenth claims of patent No. 609,103, which are as follows:—

"7. A machine of the character specified, comprising means for pressing a sole rib, sole feeding mechanism, and a yieldingly supported trimming mechanism movable toward and from the edge of the sole to conform automatically to the edge of the sole."

"13. In a machine for reinforcing insoles, the combination with a work support arranged to support the insole, of means to conform the reinforcing material to the insole and cutters movable toward and from the edge of the insole arranged to automatically follow the edge of the insole and trim the edge of the reinforcing material, substantially as described."

The commercial construction of this canvas-severing mechanism is shown in the drawings and set forth in the claim No. 11 of patent No. 614,860.

The importance of the improvements shown in the drawings and set forth in the claims of patent No. 614,860, November 29, 1898, Hadaway, may be judged from the fact that while the experimental

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machine of patent No. 603,763 had a capacity of 500 insoles per day, the machine of patent No. 614,860 had an average capacity of 1200 insoles per day.

The saving effected in the use of Gem insoles of the best quality over the all-leather insole which the manufacturer would otherwise use for the grade of work in which the best Gem insole is used, is from one-half a cent to three cents per pair, the variation depending largely upon the cost of the leather base which is reinforced. A manufacturer will often reinforce a leather insole which is almost, but not quite, good enough for use without the reinforcing, or he may reinforce the insole in order to be certain that the insole will be satisfactory in the finished shoe. In such case the minimum saving will be shown; while in case he uses a leather base made of split leather, such as is more generally used for Gem insoles, and which, when reinforced, makes an entirely satisfactory insole, the maximum saving over an all-leather insole will be effected.

#### ECONOMY INSOLE.

While the Gem insole was used, and still is used, to a large extent, it was open to the objection that the base of the reinforced lip on the inside of the lip is in a different plane and is higher than the base of the lip on the feather edge or outside of the lip. This difference in the height of the stock on the inside and outside of the lip of the Gem insole sometimes occasioned difficulty in its use, owing to the fact that the needle of the welt-sewing machine entering the stock at the base of the lip adjacent to the feather edge did not always emerge from the stock at the base of the lip on the inside as it should, but penetrated further into the body of the insole and emerged from the insole at a point removed from the lip. In attempting to remedy this difficulty there was danger that the needle would enter the lip too high on the outside so that the thread would not have sufficient support in the stock, and, further, that the upper and welt would not be forced down properly into the angle between the lip and the feather edge, as is required for good welt-sewing operation. To overcome these objections to the Gem insole the United Company's inventors produced an insole

now known as the "Economy Insole", which was made substantially as shown in patent No. 849,245, April 2, 1907, except that as commercially made now the two lips shown in that patent are stitched together instead of being cemented, which is stated in the patent to be the preferred manner of forming the insole.

The distinguishing characteristic of the Economy insole as compared with the Gem, is that while in the Gem insole there is a single lip turned up from the outside with reinforcing canvas covering the entire lip face of the insole clear to the edge, as has been fully explained, in the Economy insole there are two lips turned up from the leather blank, one turned up from the outside in a similar manner as in preparing the Gem blank, and the other lip turned up from the inside by cutting a lip out of the body of the insole inside the first mentioned lip. In the manufacture of the Economy insole, after the two lips have been formed and have been secured together, as I shall explain later, the reinforcing material is applied to the body of the insole inside the lips, and to the inside of the inner lip, but does not extend over the rib formed by the two leather lips, as in the Gem insole. It is a distinct advantage of the Economy insole over the Gem that, owing to the additional strength afforded by the two leather lips, it is not necessary to carry the reinforcing material over the top of the lip and down upon the feather edge. The saving in canvas thus effected amounts to about four cents per dozen pairs of insoles.

#### REINFORCING MACHINE: ECONOMY INSOLE.

Early in 1902 the United Company began experimental work in the development of machines for making Economy insoles. An important machine of the system for manufacturing these insoles is "Reinforcing Machine, Economy Insole", which was first put out commercially by the United Company in May, 1905. The commercial machine is constructed substantially as shown in the drawings and set forth in the claims of patent No. 979,836, December 27, 1910, Eppler (granted on an application filed February 24, 1905). The reinforcing of an Economy insole presented different problems from those which had to be dealt with in the reinforcing of

a Gem insole, on account of the inner lip, which, as already stated, is cut out from the body of the insole on the inside of the outer lip. It is, accordingly, necessary to force the reinforcing material down into the angle between the inner lip and the adjacent portion of the insole which is below the plane in which the body of the insole lies. Another difference in the requirements for this machine was that the excess canvas must be trimmed off at the top edge of the rib formed by the two lips instead of at the edge of the insole, as in making the Gem insole. These problems were solved by the organization of the patent just referred to, No. 979,836, and their solution is indicated by typical claims of that patent:—

"2. An insole reinforcing machine, having, in combination, a work support, a pressing device, and means for moving the pressing device downward to engage the reinforcing material on the insole and then move inward and farther downward so as to draw the material into the channel and press it against the lip, substantially as described."

"7. An insole reinforcing machine, having, in combination, provision for supporting an insole and for feeding it through the machine, a guide roll bearing at its periphery against the outer side of the lip of the insole and a rotating flat knife for trimming the edge of the lip, substantially as described."

#### STITCHING MACHINE: ECONOMY INSOLE.

It was originally intended to secure together the two lips raised from the insole blank prior to the reinforcing operation by cement, as indicated in the specification of patent No. 849,245, April 2, 1907, Johnson. Experimental work was carried on for several years in the endeavor to devise means which could be satisfactorily used for securing the two lips together by cement, but the company's inventor did not succeed in producing a practical machine for that purpose. Accordingly, after considerable experimenting, a successful machine for stitching together the two lips turned up from the leather blank was produced, which is known as "Stitching Machine, Economy Insole". The organization of this machine in its commercial form comprises means for turning up the lips from the body of the insole, acting progressively upon successive portions of the lip just prior to the stitching operation, means

for clamping the lips together, means for exerting pressure upon the body of the insole on the grain side opposite to the point where the stitching is taking place, to maintain the lips in proper relation to the stitching mechanism, and the means for making the stitch. No patent has as yet been granted upon this machine for sewing together the lips of the leather blank, but its organization is shown and described in applications filed May 14, 1908, January 25, 1909, and in two applications filed January 14, 1910.

I produce an Economy insole which was formed by the machines which I have just been describing.

[*Economy insole is introduced in evidence, and marked "Defendants' Exhibit 168".*]

[*Answer to Int. 84 continued:*]

This insole is broadly defined in two of the three claims of patent No. 849,245, April 2, 1907, Johnson, to which reference has already been made. A typical claim is the third:—

"3. An insole for use in manufacturing sewed shoes, consisting of a body portion having two lips cut therefrom and turned up and united to form a single stitch receiving lip around the shaft and forepart of the body portion of the insole, and a sheet of re-enforcing material cemented to the surface of the body portion and to the inner surface of the lip."

When the Economy insole stitching machine was adopted as a commercial machine in October, 1909, the Economy insole became for the first time a practicable commercial insole, and since that time the machines for making the insole have been put out extensively and have gone into general use.

#### CHANNELING MACHINE: ECONOMY INSOLE.

With the reinforcing machine and the stitching machine is furnished a machine for channeling the leather insole blank to form the two lips, which is known as the "Channeling Machine, Economy Insole". The commercial machine is constructed substantially as shown in the drawings and described in the specifications of patent No. 984,773, February 21, 1911, Meyer. A typical claim of this patent is the tenth:—

"10. A channeling machine, having in combination, a rotatable

work support for supporting a flat sole, a work feeding device above the work support, actuating means for said feeding device to cause it to engage and feed the sole and means for rotating the work support intermittently in unison with the feeding movement of the work feeding device, substantially as described."

The work-supporting mechanism of the machine embodies mechanism set forth in the claims of patent No. 984,772, February 21, 1911.

All of these machines of the Gem and Economy systems — turning machine, Gem lip; turning and slashing machine, Goodyear lip; flexible insole, machine Gem; reinforcing machine, Economy insole; stitching machine, Economy insole; and channeling machine, Economy insole — are put out by the United Shoe Machinery Company through its Goodyear department. About 40 per cent of all welt insoles used at the present time are reinforced soles.

**Mr. WEBSTER.** The answer is objected to in so far as it relates to the mechanisms of pending applications, patents issued since the filing of the petition herein, and especially in so far as it relates to matter not in reply to, or in defence of, matter introduced before the examiner by the petitioner, as being incompetent, inadmissible and irrelevant, and having no relation to the matters involved herein.

*Int. 85. Have you collected under a single cover the patents referred to by you in your answer to the last question as relating to reinforced insoles and machines for making such insoles?*

*Ans.* Yes, sir; I have. I produce the volume.

[*Volume of patents referring to reinforced insoles and machines for making such insoles is introduced in evidence, and marked "Defendants' Exhibit 169".*]

**Mr. WEBSTER.** The introduction of patents relating to matters to which objection has been heretofore made is objected to as not competent, immaterial and inadmissible.

*Int. 86. Will you please give the number, date and name of patentee of the several patents contained in the volume which has just been offered in evidence as Defendants' Exhibit 169?*

*Ans.* No. 575,460, January 19, 1897, Cole.

- No. 603,763, May 10, 1898, Hadaway.  
No. 609,103, August 16, 1898, Keith.  
No. 609,110, August 16, 1898, Milner.  
No. 610,326, September 6, 1898, Keith.  
No. 614,860, November 29, 1898, Hadaway.  
No. 623,306, April 18, 1899, Coupal and Gordon.  
No. 638,010, November 28, 1899, Hadaway.  
No. 849,245, April 2, 1907, Johnson.  
No. 979,836, December 27, 1910, Eppler.  
No. 984,772, February 21, 1911, Meyer.  
No. 984,773, February 21, 1911, Meyer.

#### WELT BEATING MACHINES.

*Int.* 87. In the list of machines given by you in your prior testimony [question No. 7] you referred to a machine, "Beating and Slashing Machine, Goodyear Welt", as being put out in November, 1904, by the United Shoe Machinery Company through its Goodyear department. What is the function of that machine and how was the operation of beating and slashing welts performed prior to its introduction? If such machine embodies mechanisms forming the subjects-matter of patents of the United Company, state the patents and state briefly the development of the art made by the United Shoe Machinery Company since 1899. If, in answering this question, you refer to any machines shown and described in Letters Patent of the United Company, name the patents.

Mr. WEBSTER. The question is objected to for that it calls for matter not referred to in the evidence presented by the petitioner before the examiner.

*Ans.* After the welt has been attached to the shoe by the inseam sewing operation it is curled up around the upper of the shoe, particularly around the toe, owing to the attachment of a straight strip of welting around the curved outline of the shoe. Before the out-sole can be attached to the shoe the welt must be beaten out so that it will lie in substantially one plane all around the shoe. Prior to 1899 two types of machines had been put out by the Goodyear Shoe Machinery Company for performing this operation of beating

out the welt. The earlier machine was known as "Beating Machine, Goodyear Welt", and was constructed substantially as shown and described in patent No. 320,075, June 16, 1885, Littlefield.

#### BEATING MACHINE : GOODYEAR UNIVERSAL WELT.

This machine, however, had been discarded before 1899 and the Goodyear Company had adopted in its place the commercial machine shown in the drawings and described in the specifications and set forth in the claims of patent No. 598,727, February 8, 1898. This machine, known as "Beating Machine, Goodyear Universal Welt", is illustrated on page 41 of Plaintiff's Exhibit No. 220, which is a copy of the catalogue of the Goodyear Shoe Machinery Company, dated January 1, 1897. The object of the improved machine of patent No. 598,727 was to enable the operator to vary the force of the blow imparted to the welt as required for different portions of the work. The curling up of the welt, to which I have referred, frequently wrinkles and bunches or thickens the welt around the toe as the natural effect of attaching a straight strip of welting around a sharply curved outline. Consequently there is the greatest need for beating, and the hardest blows are required to flatten out the welt around the curved thickened toe portion. The machine of the Littlefield patent referred to had no provision whatever for varying the force of the blow during the operation of the machine.

In the Goodyear Universal welt beating machine as shown in patent No. 598,727, above referred to, the operator was enabled instantly, by depressing a treadle, to vary the force of the blow imparted by the machine, and by imparting a harder blow in beating out the welt around the toe portion the time required for the operation on each shoe was materially lessened. The improvements illustrated in that patent No. 598,727, February 8, 1898, also included means by which the machine was made to absorb the force of the blow of the hammer instead of transmitting it through the treadle connections to the foot of the operator. A typical claim of this patent No. 598,727 is the first:—

"1. In a welt beating machine, the combination of a welt beating hammer, a table upon which the welt is placed, a movable support

therefor, a movable abutment against or upon which said table support continuously rests, bearings for said abutment which are at all times in the line of thrust of the table support, means for moving said abutment to lower the table for the introduction of the work, and a treadle connected with said abutment for moving it to raise said table to different elevations, substantially as described."

#### BEATING AND SLASHING MACHINE : GOODYEAR WELT.

In using the machine of Littlefield, patent No. 320,075, which machine, as already stated, had been superseded prior to 1899, it had been necessary in order to make the welt lie down flat around the toe, as is required, for the operator to slit the welt around the toe by hand on a large proportion of the shoes operated upon by the machine. While, as has been stated, the operation around the toe of the machine of patent No. 598,727, February 8, 1898, was much more satisfactory than that of the earlier machine, which it had superseded before 1899, the improved organization of the 1899 machine had not done away with the necessity of slitting the welt around the toe on a large proportion of the shoes operated upon by the machine. This operation of slitting the welt, which, in the use of the 1899 machine, as in the use of the earlier machine, had to be performed by hand, required considerable time and was a delicate operation because it was important that the slits should not extend entirely through the welt, as if they did they would be visible on the grain side of the welt, that is, its upper face, and would be placed in such a manner as to be objectionable in the finished shoe, and it was even more objectionable to have the slits extend entirely through the welt, because in that case they would impair the strength of the welt. As to the first objection, it should be noted that the welt around the toe portion of the shoe is particularly prominent in the finished shoe, particularly in modern shoes provided with extension edges.

It being recognized that the majority of shoes made required or would be improved by slitting around the toe, the United Company proceeded soon after its organization to develop a machine which would slit the welt whenever desired during the operation of the machine. The production of such a machine presented a number

of problems which had to be dealt with by the United Company's inventors. In the first place, it is usually desired to slit the welt only at the toe where the greatest difficulty is encountered in making the welt lie down flat in the beating-out operation. Furthermore, it is undesirable to slit the welt where it is not needed, that is, along the straighter portions of the welt, because the slitting naturally weakens the welt somewhat, and it is along the straighter portions at the ball that the greatest strain is exerted upon the out-seam, that is, the line of stitching which secures the out-sole to the welt, in the wear of the shoe. Secondly, as just explained, the slits must not extend entirely through the welt to its upper face, because if the slit were so formed the welt would be weakened and its exposed upper face would be defaced. Thirdly, those slits must be oblique to the face of the welt and must be comparatively long so that they will overlap, and the welt be firmly secured in the out-sole stitching operation. Fourth, the hammer on the welt-beating machine must, for commercial success, be operated at a high speed. The usual practice is to operate the machine at a speed which imparts about 2000 blows to the welt per minute. This speed of operation of the hammer greatly complicated the developing of an organization which would automatically slit the welt because the knife, cutting in as it does from the edge of the thin welt, can only operate successfully while the welt is clamped, and the only manner in which the welt can be clamped is by holding it between the hammer and the work support.

A machine in which all of these problems were successfully solved was produced by the United Company and was first put out for commercial use in November, 1904. This machine, known as "Beating and Slashing Machine, Goodyear Welt", is constructed substantially as shown, described and set forth in the claims of patent No. 875,171, December 31, 1907, Hadaway.

[*Adjourned to 10 o'clock A. M., Thursday, October 16, 1913.*]

BOSTON, Mass., October 16, 1913.

[*Answer to Int. 87 continued:*]

In this machine the problems which I have recited were solved in the following manner: First, the machine was so organized that the operator could slit the welt at any point desired in the progressive operation of the machine around the welt. A typical claim of patent No. 875,171, directed to this organization, is the sixteenth:—

"16. A machine for operating upon welts, having, in combination, means for beating out the welt after attachment to the shoe, means for slitting the welt, and means for throwing the welt slitting means into and out of operation during the continued operation of the welt beating means, substantially as described."

The second problem above referred to, that is, the forming of the slit obliquely to the face of the welt and extending only part way through the welt, that is, forming an oblique slit which would not extend to the exposed grain surface of the welt, was solved in this new machine by an organization defined in a number of claims of patent No. 875,171, of which the first claim is typical:—

"1. A machine for operating upon welts, having, in combination, means for beating out the welt after attachment to the shoe, and means for simultaneously forming in the welt a series of slits extending partially through the thickness of the welt, substantially as described."

The third problem referred to, namely, that of forming the slits during the operation of the rapidly reciprocating hammer, was solved in this machine by an organization defined in many claims of this patent No. 875,171, of which typical claims are the 12th and 19th, as follows:—

"12. A machine for operating upon welts, having, in combination, a welt beating hammer, means for actuating the same to beat out the welt, a work support shaped to support the welt after attachment to the shoe, a welt slitting knife, and means for actuating the knife to slit the welt while the welt is clamped between the hammer and work support, substantially as described."

"19. A machine for operating upon welts, having, in combination, a welt beating hammer arranged to act on the welt after attachment to the shoe, and welt slitting means operating to make

a single cut in the welt by a plurality of forward steps, substantially as described."

It might be well to explain the organization set forth in claim 19 by referring again to the fact that the hammer of this machine is operated to strike approximately 2000 blows per minute. It would probably be impracticable to cut into the edge of the welt and make the oblique slit desired during one engagement of the hammer with the stock, and, as has been explained, it is essential that the welt be clamped during that slitting operation. This problem was ingeniously met in this machine by an organization which effected the cut by advancing the knife while it was cutting the welt in three successive steps, these steps being taken during successive engagements of the hammer with the welt.

Before leaving this patent, attention should be called to the fact that some of its claims define in broad terms the combination of a vibrating welt-beating hammer and means for slitting the welt. A typical claim is the second:—

"2. A machine for operating upon welts, having, in combination, a work support shaped to support the welt after attachment to the shoe, a vibrating welt beating hammer, means for actuating the hammer to beat out the welt, and means for simultaneously slitting the welt, substantially as described."

The hammer mechanism of this machine is defined in the single claim of patent No. 643,455, February 13, 1900, Bayley, which is as follows:—

"1. In a machine of the character described, the combination of a lever having a tubular head; a hammer having a stem extending through said head; a spring surrounding the stem within the head between shoulders of the latter and the stem; a stop nut or the stem above the head; and sound deadening or cushioning material interposed between said nut and the head."

The knife which is used in this machine for forming the slit in the welt is defined in the claims of patent No. 875,172, December 31, 1907, Hadaway. This knife is so constructed that a slit of the same length, that is, of the same dimension lengthwise of the welt, is formed in the welt, whatever the thickness of the stock. Without this improvement the slit would naturally become longer

as the stock increased in thickness. Typical claims of this patent No. 875,172, directed to this improved knife, are as follows:—

"2. A knife for welt slitting machines having a cutting edge shaped to cut slits of substantially the same length in welts of various thicknesses when the knife is laterally inclined to the surface of the welt and is reciprocated in substantially the plane of the welt, substantially as described."

"5. A knife for welt slitting machines consisting of a flat bar having a cutting edge at its end comprising two portions arranged at an angle with each other, and shaped to cut a transverse inclined slit in a welt when the knife is reciprocated longitudinally in substantially the plane of the welt, substantially as described."

The standard commercial welt-beating machine now being leased by the United Shoe Machinery Company is constructed substantially as shown in patent No. 875,171, December 31, 1907, Hadaway, and in patent No. 875,172, December 31, 1907, Hadaway.

This machine is put out by the United Company through its Goodyear department, and after its adoption in 1904 up to March 1, 1913, the end of the company's last fiscal year, 992 of these machines had been put out. One of the machines will take care of the output of four or five welt-sewing machines.

*Int.* 88. Have you collected in a single volume the patents to which you have referred in your last answer as relating to welt-beating machines?

*Ans.* Yes, sir; and I produce the volume.

[*Volume of patents relating to welt-beating machines is offered in evidence, and marked "Defendants' Exhibit 170".*]

*Int.* 89. Will you please give the number, date and name of patentee of the several patents contained in the volume just offered in evidence as Defendants' Exhibit 170?

*Ans.* No. 320,075, June 16, 1885, Littlefield.

No. 598,727, February 8, 1898, French and Meyer.

No. 643,455, February 13, 1900, Bayley.

No. 875,171, December 31, 1907, Hadaway.

No. 875,172, December 31, 1907, Hadaway.

*Int.* 90. What is the function of the machine to which you have heretofore referred as "Inseam Trimming Machine, Goodyear

Universal"? If that machine embodies subjects-matter of any Letters Patent of the United Company, state the patents, and also state what developments have been made in the inseam trimming art by the United Shoe Machinery Company, if any, since 1899. If such developments form the subjects-matter of any Letters Patent of the United Company, state the patents.

**Mr. WEBSTER.** Counsel for petitioner objects to the question and to all testimony in reference to inseam trimming machines, on the ground that no reference has been made to such machines or patents relating thereto in the testimony thus far presented by the petitioner, and that such testimony is, therefore, inadmissible, incompetent and irrelevant as having no reference to any matter presented by the petitioner, or in reply to or in defence of any evidence submitted by the petitioner.

#### TRIMMING MACHINE: GOODYEAR UNIVERSAL INSEAM.

*Ans.* After the welt-sewing operation the shoe is left with a substantial ridge projecting outwardly from the bottom of the sole, which comprises the upper stock and the edge of the channel or rib on the insole. Before the out-sole can be attached to the welt, this projecting ridge of stock must be trimmed off, as it would prevent the desired and necessary close fitting of the out-sole on the bottom of the shoe. A shoe having the welt attached, and which shows the necessity for the inseam trimming operation is shown in Defendants' Exhibit 107. Prior to February, 1899, the Goodyear Shoe Machinery Company had been leasing an inseam trimming machine which is illustrated on page 34 of Plaintiff's Exhibit No. 220, being the Goodyear Shoe Machinery Company catalogue of January 1, 1897. Only a small number of these machines was being put out by the Goodyear Company, however, and only a limited number were in use in February, 1899. At that date the inseam trimming operation was performed almost entirely by hand. In February, 1899, the inseam trimming machine being put out by the Goodyear Shoe Machinery Company, known officially as "Trimming Machine, Goodyear Universal Inseam", embodied mechanisms set forth in the claims of the following patents: —

- No. 540,438, June 4, 1895, Harris.  
No. 542,813, July 16, 1895, Spencer.  
No. 558,379, April 14, 1896, French and Meyer.  
No. 558,380, April 14, 1896, French and Meyer.  
No. 558,381, April 14, 1896, French and Meyer.  
No. 559,314, April 28, 1896, Spencer.  
No. 590,831, September 28, 1897, French and Meyer.

Of these patents, the first, No. 540,438, shows in its drawings a machine not even remotely resembling the commercial inseam trimming machine of 1899, and the machine of that patent was not a commercial success. All of its four claims, however, set forth mechanisms embodied in the commercial machine.

Only one experimental machine was constructed as shown in the drawings of patent No. 542,813, but the first claim of that patent defines mechanisms embodied in the commercial machine of 1899.

The commercial inseam trimming machine as put out by the Goodyear Company just prior to February, 1899, was constructed substantially as shown and described in patents —

- No. 558,379, April 14, 1896, French and Meyer;  
No. 558,380, April 14, 1896, French and Meyer;  
No. 558,381, April 14, 1896, French and Meyer;  
No. 590,831, September 28, 1897, French and Meyer.

All of the seventeen claims of the first patent just enumerated, No. 558,379, April 14, 1896, defined mechanisms embodied in the 1899 machine, and retained in the machine in the different stages of its development since that time. Typical claims of this patent are the following: —

"1. In a welt seam trimming machine, a welt seam trimming knife turning on an axis, a means for holding and feeding the work, having as a co-operative part of it a device which acts upon the under side of the welt and projects inwardly and terminates close to the point where the cutting is being done, thereby entering the gradually contracted space between said knife and welt, tangent to the curvature of the knife, and holding the work directly opposite where the cutting is being done, substantially as described."

"15. In a welt seam trimming machine, the combination of feeding mechanism for the work, two work supports as *c* and *r* located

a short distance apart to receive the welt seam between them, and a curved trimming knife crossing said space and means for moving it substantially at right angles to the progress of the work, substantially as described."

The fifth claim of patent No. 558,380 is as follows:—

"5. In a welt seam trimming machine, the combination of a work support, a pair of feeding jaws, the front jaw terminating just above the work support, and a trimming knife, substantially as described."

Claim 1 of patent No. 558,381 is as follows:—

"1. In a welt seam trimming machine, the combination of a work support at the face side of the welt, a welt seam trimming knife at the opposite side thereof having a cutting edge upon one side, means for moving it, a pair of clamp feeding jaws, and means for operating them to grip the welt, and to feed along the work against the cutting edge of the moving knife, substantially as described."

The problem of keeping always sharp the edge of the crown knife used on this machine was solved by the organization shown in the drawings and defined in the claims of patent No. 590,831. Prior to the adoption of this improvement great difficulty had been experienced in keeping the knife properly sharpened, as, owing to the severe work which it has to do and the frequent engagement of the edge with a lasting tack which had not been removed, or with the point of a lasting tack which had been broken off and remained in the stock, the operator had to spend a considerable portion of his time in sharpening the knife. The improvement of this patent No. 590,831 provided the machine with automatically operating knife-grinding mechanism which, without any attention at all from the operator, moved the grinding means intermittently into its knife-grinding position. By this improvement the knife was always kept properly sharpened and the operator lost no time in stopping the machine and grinding the knife. A typical claim of this patent No. 590,831 directed to this improvement is the first:—

"1. In a welt seam trimming machine, a grinding wheel, its shaft, a supporting frame for said shaft having a bearing in which it is free to rotate, a frame constructed and arranged to receive and support said shaft supporting frame having rods upon which

said shaft supporting frame is free to slide in the direction of the length of the shaft, means for rotating said shaft, and means for moving its supporting frame back and forth, to thereby rotate the grinding wheel and cause it to automatically travel back and forth across the beveled cutting edge of the trimming knife, substantially as described."

Another feature of the organization of the commercial machine of 1899, and of the present day, is defined in the fifth claim of this patent No. 590,831, which is as follows:—

"5. In a welt seam trimming machine, a crown knife having a flaring flange and two work supports as *c* and *r*, located a short distance apart to receive the welt seam between them, said knife working in and across said space, the work support *r* being located in front of said knife and made adjustable in and out, substantially as described."

All of the six claims of this patent No. 590,831 define mechanisms embodied in the commercial machine of 1899, and ever since.

At the time the United Company was formed, in February, 1899, there was, as I have stated, only a small number of these inseam trimming machines in use, and the inseams of nearly all welt shoes being made at that time were trimmed by hand. The chief reason why the machine had not superseded the hand operation was that the machine was not so organized as to insure that it would always perform its work properly and would not occasionally cut too deep a gouge into the inseam, which, of course, would spoil the inseam and the shoe. The operation of inseam trimming was a delicate one, because the cutting must be done as closely as possible to the inseam, and yet not so close as to damage the inseam and weaken the shoe. This requirement will be understood on inspection of Defendants' Exhibit No. 1, which is a shoe which has had its inseam trimmed, and I also produce a part of a shoe, the inseam of which has been partially trimmed on the present commercial inseam trimming machine.

[*Shoe showing partial operation of inseam trimming machine is offered in evidence, and marked "Defendants' Exhibit 171".*]

The inseam trimming machine was not a commercial success in February, 1899, and for over ten years the United Company's

inventors were engaged almost continuously in the endeavor to improve the machine so that it would trim the inseam properly and rapidly without the danger of gouging into the line of stitching. The first improvement which was sufficiently successful so that it was incorporated in the commercial machine was adopted in 1904. This improvement comprised a guide for engaging the inner edge of the welt during the operation of the machine, the object of the improvement being to limit the movement of the shoe toward the cutter, and thereby prevent the gouging of the cutter into the inseam. The improvement is defined in all of the seven claims of patent No. 788,796, May 2, 1905, Selby, of which typical claims are 1 and 5:—

“1. An inseam trimming machine, having, in combination, a trimming knife, and means for guiding a welted shoe comprising a guide arranged to bear upon the edge of the welt at one side of the upper and support the upper while being cut by the knife, substantially as described.”

“5. An inseam trimming machine, having, in combination, a cylindrical trimming knife and a guide extending within the periphery of the knife arranged to bear against the edge of the welt of a welted shoe and support the upper while being cut by the knife, substantially as described.”

While the improvement of the Selby patent has always, since its adoption, been embodied in the commercial machine, and while it improved the operation of the machine sufficiently so that a somewhat larger number were put into use, the machine was still far from perfect in its operation and was not yet, even with this improvement, a satisfactory commercial machine. The next improvement, resulting from the experimental work constantly being carried on with the object of perfecting the machine, was the incorporation in the machine's organization of a guide arranged to engage the insole inside of the inseam and close to it, and also close to the point of operation of the knife. This improvement, adopted in 1906, is shown in the drawings and defined in the claims of patent No. 939,498, November 9, 1909, Hawkins and Bourgeois. A typical claim of this patent is the third:—

“3. An inseam trimming machine, having, in combination, a cylindrical knife, means for guiding a shoe during the trimming

operation comprising a guard consisting of a thin sheet extending outside of the knife in close proximity thereto, and arranged to bear on the sole inside of the inseam, and a support for the guard located in front of the cutting edge of the knife arranged to support the guard close to the edge of the knife."

This improvement was incorporated in the machine from its adoption in 1906 until it was superseded in 1909 by another improvement to which I shall shortly refer. The machine as so improved in 1906 was nearer than ever before to commercial success, but it was still unsatisfactory to the majority of shoe manufacturers, and the greater number of shoes being manufactured still had their insoles trimmed by hand. In 1909, however, there were embodied in the machine improvements which so improved the quality of the work, and so thoroughly insured the machine against the danger of cutting too deep a gouge into the inseam and against the danger of injuring parts of the upper remote from the trimming knife by accidental engagement with the knife, and so increased the capacity of the machine, that for the first time in the history of the machine it could be regarded as an entirely successful commercial machine. The improvements adopted in 1909 are defined in the claims of patent No. 956,971, May 3, 1910, Johnson, and this patent, except in one respect, to which I will later refer, shows in its drawings and describes in its specifications the commercial inseam trimming machine as it is now being put out by the United Company. These improvements are defined in all of the twelve claims of this patent. Perhaps the most valuable of the improvements is the organization of the crease guide which engages the inseam in the angle between the welt and upper, and the channel guide by which they constantly grip the inseam and hold it tightly between them adjacent to the point where the knife is operating. In the machine as organized before these improvements were incorporated in it the crease guide and channel guide, although adjustable, were stationary, and there was no provision for varying thickness in the inseam, and consequently these guides did not hold and grip the inseam as tightly as was necessary for the proper operation of the machine. In the machine as improved in 1909 the channel guide is provided with a stock-engaging roll

which is held yieldingly pressed against the material of the inseam, this yielding movement toward the inseam being in the arc of a circle which is concentric with the circular-crowned knife. Typical claims of the Johnson patent No. 956,971, directed to this organization, are the first and fourth :—

“ 1. An inseam trimming machine, having, in combination, a trimming knife, and relatively yielding crease and channel guides for continuously engaging the crease and lip of a welted shoe to position the shoe with relation to the trimming knife, substantially as described.”

“ 4. An inseam trimming machine, having, in combination, a cylindrical trimming knife, a crease guide arranged to enter the crease between the upper and welt of a welted shoe, a channel guide mounted to move in an arc substantially concentric with the axis of the cutter, and means for holding the channel guide against the lip of the insole during the trimming operation, substantially as described.”

This organization is defined in broader terms in patent No. 877,036, January 21, 1908, Bates, of which the third claim is typical :—

“ 3. An inseam trimming machine, having, in combination, a trimming knife, a fixed guide arranged to engage a shoe externally, an internal guide arranged to engage the lip of the insole of the shoe continuously and co-operate with the external guide to position the shoe properly with relation to the trimming knife, and means for yieldingly holding the internal guide continuously in engagement with the lip of the insole.”

The improvements of the Johnson patent also included a guard for the knife, arranged to protect the shoe in case it were accidentally tipped by the operator. A typical claim of the Johnson patent No. 956,971, directed to this guard, is the sixth :—

“ 6. An inseam trimming machine, having, in combination, a trimming knife, a crease guide arranged to enter the crease between the upper and welt of a welted shoe, a channel guide, and a guard arranged to engage the shoe beyond the cutting point of the trimming knife, substantially as described.”

The specific form of this guard which is indicated at 14 in the drawings of the Johnson patent is not now used in the machine, as it has been superseded by an improved form of guard which is

the subject-matter of pending applications filed October 3, 1910, and May 4, 1912. Otherwise the drawings of this patent No. 956,971 show the present commercial inseam trimming machine.

The importance of the improvements which have been made in the inseam trimming machine from time to time since 1899, culminating in the improvements shown and set forth in the claims of the Johnson patent No. 956,971, may be judged from the following facts:—

During the first year after the United Company was formed only fifteen inseam trimming machines were put out; during the second year, twelve; during the third year, seventeen; and during the fourth year, only eleven. After the incorporation of the Johnson improvements together with the other improvements made since 1899, the output of the machine increased to eighty-nine during the year ending March 1, 1910; to 119 during the year ending March 1, 1911; and to 153 machines put out during the year ending March 1, 1912. On March 1, 1909, there were 158 of these machines out, although the machine had been on the market for over a dozen years; that is, during the first three years after the Johnson improvements had been incorporated in the machine more than twice as many machines were put out as had been supplied during the entire previous life of the machine up to March 1, 1909. By March 1, 1913, at the end of the company's last fiscal year, 747 machines had been put out. Under ordinary conditions an inseam trimming machine will take care of the output of three welt and turn machines.

In dwelling upon the importance of the inventions of this Johnson patent No. 956,971, I should not be understood as stating or implying that these improvements have superseded the improvements of the earlier patents which have been discussed, except the improvements set forth in the claims of patent No. 939,498, which were superseded by the improvements defined in the claims of the Johnson patent. All of the claims which have been quoted from the other earlier patents define important features of the present commercial machine.

Since the Johnson improvements and the other more recent im-

provements referred to have been incorporated in the machine there has been a further improvement in the machine which is defined in the claim of patent No. 1,049,452, January 7, 1913, Dow.

In the endeavor to produce a still more satisfactory inseam trimming machine the United Company's inventors have been engaged for several years in experimental work which has resulted in the production of two inseam trimming machines which are now being tried out under commercial conditions. One of these machines is constructed substantially on the same lines as the present commercial machine, while the other machine is of an entirely different type.

This machine, the "Trimming Machine, Goodyear Universal Inseam", is put out by the United Company through its Goodyear department.

*Int.* 91. Have you collected under a single cover the patents to which you referred in your last answer relating to inseam trimming machines?

*Ans.* I have, and I produce a volume comprising copies of those patents.

[*Volume of patents relating to inseam trimming machine is introduced in evidence, and marked "Defendants' Exhibit 172".*]

*Mr. WEBSTER.* The petitioner objects to the introduction of any patents dated after the date of the filing of the petition herein.

*Int.* 92. Will you please give the number, date and name of patentee of the several patents contained in the volume which has just been offered in evidence as Defendants' Exhibit 172?

*Ans.* No. 540,438, June 4, 1895, Harris.

No. 542,813, July 16, 1895, Spencer.

No. 558,379, April 14, 1896, French and Meyer.

No. 558,380, April 14, 1896, French and Meyer.

No. 558,381, April 14, 1896, French and Meyer.

No. 559,414, April 28, 1896, Spencer.

No. 590,831, September 28, 1897, French and Meyer.

No. 788,796, May 2, 1905, Selby.

No. 877,036, January 21, 1908, Bates.

No. 939,498, November 9, 1909, Hawkins and Bourgeois.

No. 956,971, May 3, 1910, Johnson.

No. 1,049,462, January 7, 1913, Dow (application filed March 11, 1912).

*Int.* 93. In the list of machines given by you in your prior testimony (question No. 7) you referred to a machine, Goodyear Universal shank skiving machine, as put out by the United Shoe Machinery Company through its Goodyear department on February, 1899. State the function of such a machine and whether or not the mechanism embodied therein forms the subjects-matter of any Letters Patent of the United Company, and what improvements have been made, if any, by the United Shoe Machinery Company since 1899 in machines for skiving shanks. If such improvements form the subjects-matter of any Letters Patent of the United Shoe Machinery Company, state the patents, and state briefly the reasons for the adoption of such improvements.

#### SHANK REDUCING MACHINES FOR WELT WORK.

*Ans.* On all, or practically all, women's welt shoes, and on probably the majority of men's single-soled welt shoes, it is desired that the combined thickness of the welt and the out-sole in the shank shall be reduced at the edges of the sole on both sides. This result is, at the present time, usually secured by removing some of the stock at the edge of the out-sole in the shank under the channel lip formed during channeling operation. There is also used to a considerable extent a machine for obtaining this result by removing some of the material from the under side of the welt, that is, the face of the welt which engages the out-sole.

Some years before February, 1899, the Goodyear Shoe Machinery Company had supplied to shoe manufacturers a machine which skived, that is, removed, the stock from the flesh side of the sole before the sole was attached to the shoe. This machine was unsatisfactory, however, because the operator could only guess where he should begin and leave off the skiving operation, and when the sole was attached to the shoe it was frequently found that on one or both sides the thinner portion of the sole was either too long or too short to fit the shoe to which it was attached.

**SKIVING MACHINE : GOODYEAR UNIVERSAL SHANK.**

This led to the development by the Goodyear Shoe Machinery Company, before 1899, of a machine known as "Skiving Machine, Goodyear Universal Shank", which was adapted to trim off stock from the flesh side of the sole between the sole and the welt, after the sole had been cemented to the shoe preparatory to the out-seam stitching operation. This machine, which is illustrated on page 54 of Plaintiff's Exhibit 220, being the catalogue of the Goodyear Shoe Machinery Company of January 1, 1897, was the machine which was being put out by the Goodyear Company just prior to February, 1899, and which the United Company continued to put out after its formation.

That machine was constructed substantially as shown and described in patent No. 540,616, June 4, 1895, French and Meyer, and all of the eight claims of that patent define mechanisms embodied in this machine. Typical claims of this patent are the following:—

"1. In a shanking and feather edging machine, a cutter to feather edge the outer sole while on a last, a guide to hold the said cutter in a plane inclined with relation to the plane of the face of the outer sole combined with a four-motioned clamping feed, composed of a dog and an opposed member adapted to grasp said outer sole between them, the said dog working in the space between the inner side of the outer sole and the outer side of the inner sole substantially as described."

"4. The feed frame, a feed dog having its shank mounted in a guideway in said frame, and an opposed feeding member carried by said frame, combined with devices to move said frame and carry with it the said feeding dog and opposed feeding member, and to reciprocate said feeding dog independently on said frame to grasp and release the outer sole; a cutter; an interposed edge gage; and a movable spring supported carrier therefor, whereby the said edge gage may be moved to vary the quantity of the material removed from the edge of the outer sole while on the last, substantially as described."

**SKIVING MACHINE : GOODYEAR SHANK WELT.**

During the first few years after the organization of the United Company it continued to put out the 1899 machine, Goodyear

Universal shank skiving machine, which had been the standard commercial machine of the Goodyear Company, but the operation of that machine was not satisfactory, because it was essential to its operation that it force apart the out-sole and the welt which had been cemented together in the sole-laying operation preparatory to the out-sole-stitching operation. With a view to producing a machine which would perform this shank-reducing operation in such manner that in the operation of the machine it would not be necessary to force apart the welt and the out-sole, the United Company proceeded with experimental work which had been begun by inventors of the Goodyear Company before the formation of the United Company. This experimental work resulted eventually in the production of a machine known as "Skiving Machine, Goodyear Shank Welt", which was first put out for commercial use in January, 1904, and which secured the desired reduction in the thickness of the combined welt and out-sole in the shank by reducing the thickness of the welt. The welt-skiving operation of this machine was performed after the welt had been secured to the shoe, but before the out-sole was stitched to the welt. A double advantage was secured over previous methods by the organization and mode of operation of this new machine. In the first place, the location of the skiving cut could be accurately determined with relation to each particular shoe, with assurance that the cut would be of just the right length for the particular shoe. In the second place, since the operation was performed before the out-sole was cemented to the shoe, the objectionable forcing apart of the out-sole and the welt which was necessary in the operation of the Universal shank skiving machine, the machine of 1899, was obviated. This new machine was so organized that the limit of operation of the trimming knife with relation to the inseam could be accurately adjusted, thus obviating any danger of injuring the inseam during the operation of the machine, and the inclination of the cut, that is, the amount of stock removed by the machine, could also be accurately determined by the adjustment. While the commercial machine is not shown in any granted patent, but is shown in the drawings and set forth in the claims of a pending application filed March 18,

1903, important mechanisms incorporated in the machine are defined in the claims of patent No. 620,205, February 28, 1899, Winkley, of which a typical claim is the first:—

"1. In a welt skiving machine, the combination with a feed roll and a combined work support and crease guide, of a skiving knife and knife supporting means, said knife supporting means having means for longitudinal, angular and vertical adjustment of the knife with reference to the combined work support and crease guide, substantially as described."

This machine, skiving machine, Goodyear shank welt, first put out in January, 1904, as has been stated, was immediately accepted by shoe manufacturers as a great advance over the Universal shank skiving machine, the machine of 1899, and the demand for the 1899 machine ceased immediately after the introduction of the new machine, which was put out in large numbers and was used on both men's and women's shoes.

#### REDUCING MACHINE : GOODYEAR OUTSOLE CHANNEL SHANK.

Many manufacturers of women's shoes desired, however, to reduce the combined thickness of the welt and the out-sole in the shank more than was practicable by removing the stock from the welt alone, and also some manufacturers desired to effect this reduction by removing stock from the sole alone, without skiving the welt at all. Accordingly, the United Company undertook the development of a machine by which the thickness of the sole could be reduced without the necessity of tearing away from the welt the cemented out-sole, which had been necessary in the operation of the machine used in 1899 for skiving the out-sole, as has been previously explained. As a result of experimental work looking to the production of such a machine, there was first put out for commercial use in April, 1909, a machine which was organized for removing stock from the out-sole under the channel flap. This machine is known as "Reducing Machine, Goodyear Outsole Channel Shank", and in its commercial form is shown and defined in the claims of pending applications filed March 18, 1903, and May 27, 1909, and some of the mechanisms embodied in the machine are defined in granted patents, of which one is No. 620,205,

February 28, 1899, Winkley, to which I have already referred in connection with the skiving machine, Goodyear shank welt.

Another patent which defines in its claims mechanisms embodied in this new machine of 1909 is No. 1,018,045, February 20, 1912, Goddu, granted on an application filed September 25, 1908. A typical claim of this patent is the tenth :—

"10. A shank trimming machine, having, in combination, a trimming knife adapted to trim off a portion of the edge of a shoe sole, a guide arranged to engage the channel of the outsole while on the shoe and means for adjusting the guide with relation to the knife, substantially as described."

Before this new machine was produced by the United Company and put into commercial use in April, 1909, no machine had ever before been used which was organized to remove stock from the out-sole of a shoe, and thereby thin the edge of the out-sole without tearing the out-sole away from the welt.

Both the shank welt skiving machine, introduced by the United Company in 1904, and the out-sole channel shank reducing machine, introduced by the United Company in 1909, are now being supplied to shoe manufacturers according to their preferences, although the demand for the channel shank reducing machine is greater than the demand for the other machine. Some manufacturers of women's shoes use both machines, securing an extreme thinness in the shank of the sole by removing material both from the welt and from the sole.

Between January, 1904, and March 1, 1913, 344 of the shank welt skiving machines were put out; and between April, 1909, when the later machine was introduced, and March 1, 1913, 160 outsole channel shank reducing machines had been supplied to shoe manufacturers. The shank welt skiving machine has a capacity which enables it to operate upon the shoes the welts of which have been sewed on six welt-sewing machines, or one channel shank reducing machine will operate upon the product of five or six welt-sewing machines.

Both of those machines, skiving machine, Goodyear shank welt, and reducing machine, Goodyear outsole channel shank, are put

out by the United Shoe Machinery Company through its Goodyear department.

**Mr. WEBSTER.** The petitioner objects to the portion of the foregoing answer which makes reference to mechanisms not shown in patents issued prior to the filing of the petition herein.

*Int.* 94. Have you collected the patents referred by you in your last answer under a single cover?

*Ans.* Yes, sir; I produce a volume comprising those patents.

[*Patents relating to shank reducing machine for welt shoes is introduced in evidence, and marked "Defendants' Exhibit 173".*]

**Mr. WEBSTER.** The petitioner objects to the introduction in evidence of the patents issued after the date of the filing of the petition.

*Int.* 95. Will you please give the number, date and the name of patentee of the several Letters Patent in the volume which has just been offered in evidence as Defendants' Exhibit 173?

*Ans.* No. 540,616, June 4, 1895, French and Meyer.

No. 620,205, February 28, 1899, Winkley.

No. 1,018,045, February 20, 1912, Goddu (application filed September 25, 1908.)

#### WHEELING AND BURNISHING MACHINES.

*Int.* 96. In the list of machines submitted by you in your previous testimony (question No. 7) you referred to a machine, indenting and burnishing machine, Goodyear welt, and also to a machine, burnishing machine No. 2, Goodyear impression stitch. Please state the function of these machines, and if the mechanisms embodied therein form the subjects-matter of Letters Patent of the United Company, state the patents; also state the development in the art to which these machines relate, if any, made by the United Company since 1899. If, in answering this question, you refer to machines disclosed in Letters Patent, name the patent.

**Mr. WEBSTER.** The question is objected to for that it calls for matter in reference to which the petitioner has submitted no evidence, and therefore the matter called for is not in reply to, or in defence of, any matter presented by the petitioner.

*Ans.* The field for the two machines inquired about was created about 1905, by the introduction at that time of the new method of making welt shoes, which consisted in attaching the out-sole by a seam known as a "fudge stitch", as explained fully in my previous testimony relating to out-sole stitching machines. Prior to 1905, it was the usual practice to finish the upper face of the welt by indenting or separating the stitches on the Hadaway stitch-separating machine, but this machine was adapted particularly for use on shoes which had had their out-soles secured on the out-sole stitching machine by a seam which was exposed on the upper face of the welt, which was the way in which the shoes had been generally made prior to 1905. A shoe which has been operated upon by the stitch-separating machine is shown in Defendants' Exhibit 121. When, however, it became the more general practice to attach out-soles of welt shoes by the fudge stitch, that is, by forming a slit in the upper face of the welt and embedding the stitch of the out-seam in the slit, manufacturers no longer desired to use a stitch-separating machine on that class of work, but wished to finish the upper face of the welt by forming imitation stitch impressions in it, and then imparting a high finish to those imitation stitches by burnishing them. No machine was being supplied to shoe manufacturers in 1899 for performing the operation of stitch burnishing.

#### INDENTING AND BURNISHING MACHINE: GOODYEAR WELT.

To supply the demand from shoe manufacturers for a machine adapted for use under these new conditions of manufacture of welt shoes, the United Company developed, and first put out for commercial use in July, 1905, a machine known as the "Indenting and Burnishing Machine, Goodyear Welt". This machine was offered to manufacturers and was used to perform both the preliminary operation of "wheeling", that is, forming imitation stitch impressions on the upper face of the welt, and also the operation of burnishing these imitation stitch impressions after they had been formed. The machine was constructed substantially as shown in the drawings and described in the specifications of patent

No. 768,560, August 23, 1904, Casgrain, as modified by incorporating in the organization of that machine the mechanism shown and described in the claims of patent No. 906,705, December 15, 1908, Hadaway.

The majority of the twenty-five claims of patent No. 768,560 set forth mechanisms embodied in this machine. The general principle of operation of the machine is well set forth in the following typical claims of that patent :—

1. "In a machine of the class described, a leather working tool, and means for imparting to said tool while in contact with the stock a succession of rapid blows."

"8. In a machine of the class described, a stock support, a rotary tool to engage and travel over the face of the stock, and means to effect rapid relative movements of the stock support and tool toward and from each other to subject the stock to a succession of rapid blows."

The purpose of the improvements defined in the claims of patent No. 906,705, as well as the construction of the commercial machine embodying this improvement, is well set forth in the claims of that patent, of which a typical claim is the first :—

"1. A stitch indenting tool, having a grooved working face the surfaces of which are substantially plane and continuous throughout the working face of the tool and which are curved upwardly at their outer ends to prevent this portion of the working face from marring the work when the remaining portion is forced below the surface of the work, substantially as described."

The mechanism embodied in the organization of this machine which provided for presentation to the action of the tool of sole edges of widely varying classes and styles of work, is defined in claim 4 of patent No. 690,422, January 7, 1902, Hadaway. This claim is as follows :—

"4. A stitch separating machine, having, in combination, an indenting tool and actuating means therefor, a slide, a work support mounted thereon arranged to engage the bottom of a shoe sole, and means for adjusting the work support on said slide to vary the angle of inclination of the sole engaging surface, substantially as described."

For some few years after this machine, the indenting and bur-

nishing machine, Goodyear welt, was first put out it was used to perform both operations required for finishing the fudge stitched shoes; first, wheeling, that is, the making of the imitation stitch impressions, and, secondly, the burnishing of those stitch impressions. The machine was very successful in the performance of the first operation, but it was not satisfactory as a stitch-burnishing machine.

#### BURNISHING MACHINE, NO. 2: GOODYEAR IMPRESSION STITCH.

After the acquisition of the patents of Booth Brothers, the United Company adopted as its commercial stitch-burnishing machine the machine which had previously been put out by Booth Brothers, and then put out its first machine, that is, the indenting and burnishing machine, primarily as a wheeling machine, so that after that time the United Company's customers were supplied with the indenting and burnishing machine for wheeling, and with the Booth machine, known as "Burnishing Machine No. 2, Goodyear Impression Stitch (Booth)", for burnishing the stitches.

The superiority of the Booth machine for the stitch-burnishing operation was due largely to the fact that the stitch was burnished by a wheel shaped to fit the indentations previously made in the wheeling, which, while in contact with the stock, was reciprocated very rapidly longitudinally of the stitch impressions, thus burnishing and imparting a high finish to the upper face of the welt. The length of this reciprocating burnishing movement is about one-sixteenth of an inch, and as the machine imparts to the tool between 6000 and 7000 complete reciprocating movements a minute, each portion of the welt receives the benefit of a large number of these burnishing reciprocations. The result of the operation of this stitch-burnishing machine was shown in Defendants' Exhibits 109 and 110.

This present commercial stitch-burnishing machine of the United Company is shown in drawings and set forth in all of the thirty-nine claims of patent No. 845,939, March 5, 1907, Flynt. A typical claim of this patent is the eighth:—

"8. In a machine of the character described, a burnishing tool

formed to engage indentations arranged transversely at the edges of the stock, and means for imparting rapid polishing movements to said tool in a direction substantially lengthwise of the indentations."

In adopting this Booth burnishing machine the United Company improved its operation by embodying in it an invention previously used in the Goodyear welt indenting and burnishing machine, which is defined in three of the claims of patent No. 906,705, December 15, 1908, Hadaway, from which I have already quoted a typical claim in the portion of my testimony relating to the Goodyear welt indenting and burnishing machine.

To protect the upper from injury by transmission of heat from the tool to the upper, of which there was danger in the operation of the machine, since the burnishing tool has to be heated, usually by a gas flame, the machine was provided with the mechanism set forth in all of the 15 claims of patent No. 1,005,185, October 10, 1911, Flynt.

Both of these machines, Goodyear welt indenting and burnishing machine and burnishing machine No. 2, Goodyear impression stitch, are put out by the United Company through its Goodyear department for welt work, and through its general department to a comparatively small extent for use on McKay sewed shoes. Nineteen hundred and fifty-three of the welt indenting and burnishing machines had been put out between the date of its introduction in 1905 and March 1, 1913, while since the adoption of the Booth stitch-burnishing machine 519 of those machines have been put out.

*Int. 97.* Have you collected in a single cover the several patents referred to by you in your last answer as relating to wheeling and burnishing machines? If so, will you please produce such volume?

*Ans.* I have, and I produce the volume.

[*Volume of patents relating to wheeling and burnishing machines is offered in evidence, and marked "Defendants' Exhibit 174".*]

*Int. 98.* Please give the number, date and name of patentee of the several patents contained in the volume which has just been offered in evidence as Defendants' Exhibit 174.

*Ans.* No. 690,422, January 7, 1902, Hadaway.

No. 768,560, August 23, 1904, Casgrain.

No. 845,939, March 5, 1907, Flynt.

No. 906,705, December 15, 1908, Hadaway.

No. 1,005,185, October 10, 1911, Flynt.

*Int.* 99. After the operation of the lasting machine is the shoe then in condition to have the welt attached thereto by the operation of the welt-sewing machine? If not, what operation or operations had to be performed according to the method of manufacturing shoes in 1899? If any such operations were necessary in 1899, state what has been done by the United Company to provide shoe manufacturers with machines for performing such operations. If such machines form the subjects-matter of any Letters Patent of the United Company, refer to such patents. If, in answering this question, you have occasion to refer to any prior machines disclosed in the United Company's Letters Patent, please refer to such patents. If the United Company has developed any new methods or machines which rendered unnecessary any of such operations, describe such methods and machines, and if they form the subjects-matter of Letters Patent of the United Company, state the patents.

**Mr. WEBSTER.** The question is objected to for that it calls for matter not referred to in evidence presented by the petitioner, and because the same is not in reply to, or in defence of, any matter presented by the petitioner.

#### UPPER TRIMMING AND TACK PULLING MACHINES.

*Ans.* Immediately after the lasting operation a shoe has projecting outwardly around its bottom a bunch of stock comprising the upper leather and lining, and at the toe the edge of the box toe, if a box toe is used. This projecting stock is liable to interfere with the operation of the looper and the thread arm on the welt sewing machine in the subsequent operation of sewing the welt and upper to the insole. Accordingly this surplus material must be trimmed off before the welt-sewing operation.

A lasted shoe, illustrating the condition in which the shoe is left

after the lasting operation, and illustrating the bunch of excess material at the toe to which I have referred, is shown in Defendants' Exhibit 149. Furthermore, the heavy lasting tacks which are inserted during the lasting operation to hold the upper in lasted condition, and which are also shown in Defendants' Exhibit No. 149, must be removed before the welt-sewing operation, as these tacks are liable to be broken by the needle of the welter, since they extend across the path of the needle, being driven into the bottom of the last; or, if the needle strikes a lasting tack squarely the needle will almost always be broken, resulting in a heavy expense in replacing needles. The removal of the lasting tacks is further desirable in view of the danger of breaking the thread of the inseam by stranding it on a lasting tack. Accordingly, it is the general practice to remove the lasting tacks before the welt-sewing operation.

#### TRIMMING MACHINE — MODEL A: REX UPPER.

As to the first of the operations to which I have referred, that is, the trimming off of the surplus upper stock to prepare the shoe for the operation of the welter, that operation was, prior to 1899, always performed by hand by the use of a hand knife. The United Company soon after its formation undertook to develop a machine for performing this upper-trimming operation, always before performed by hand, as I have stated. As a result of the experimental work of its inventors two entirely different types of machines were produced. The one which was first developed into commercial condition was that which is now known as "Trimming Machine, Model A, Rex Upper", and the first machine of this type was put into commercial use in December, 1905. The machine as commercially used was constructed substantially as shown in patent No. 961,200, June 14, 1910, Ashton.

One of the most serious problems which had to be dealt with in providing a machine for doing this work was the necessity for gathering the irregularly located and wrinkled stock into proper position for the operation of the cutting means. Substantial progress toward the solution of this problem was made by the improve-

ment of this Ashton patent No. 961,200, of which a typical claim is the following :—

" 1. A vamp trimming machine, having, in combination, vamp trimming means arranged to trim the projecting edges of the vamp and lining of a lasted shoe, and a guiding roll located in close proximity to the trimming means and arranged to extend inside of the vamp and lining of a lasted shoe and direct the vamp and lining to the trimming means."

#### TRIMMING MACHINE—MODEL H: REX UPPER.

While, as I have stated, the machine shown in this patent No. 961,200, and defined in all of its sixty-eight claims, was the first machine to be put into commercial use, and while the machine was in general use for some two years and represented a substantial advance in the industry, and substantial progress towards the production of the satisfactory commercial machine which is now being put out by the United Company, the other inventor to whom I have referred, Hadaway, whose experimental work antedated Ashton's, was in the meantime developing a machine which ultimately proved to be a much more satisfactory machine for performing this operation. Hadaway had found, early in his experimental work, that there was danger that the plaited portion of the upper stock around the toe would not be properly trimmed, first because this stock flared outward, as is shown in Defendants' Exhibit 8, so that means must be provided for straightening up this flaring stock and presenting it in proper position for the action of the knife; and secondly, because there was liability of the folds of the upper stock working backwardly during successive operations of the knife so that it would not be trimmed at all. A weakness of the machine of the Ashton patent No. 961,200 was that the lining of the upper, which it is important to trim at this operation, was not always presented properly for the operation of the knife. As the result of Hadaway's experimenting, extending through a period of several years, he finally produced a successful machine, the organization of which provided for all of the difficulties to which I have referred. This machine was adopted as the standard commercial machine of the United Company in June, 1908, and it then superseded the model A

machine of the Ashton patent No. 961,200. The new machine is officially known as "Trimming Machine, Model H, Rex Upper". This new machine, as it has been put out for commercial use since its adoption in 1908, is constructed substantially as shown in patent No. 922,697, May 25, 1909, Hadaway. All of the thirty-nine claims of that patent define the organization of this new upper trimming machine. Typical claims which indicate in a general way Hadaway's solution of the problems which I have enumerated are the following:—

"6. A vamp trimming machine, having, in combination, a trimming knife for trimming the edge of the vamp and means for bending the edge of the vamp inwardly toward the medial line of the shoe into position to be acted upon by the trimming knife."

"13. A vamp trimming machine, having, in combination, vamp trimming knives, a frusto conical roll provided upon its peripheral surface with spiral ribs arranged to exert an outward wiping action on the shoe lining in proximity to the trimming knives, and means for rotating the roll."

"30. A vamp trimming machine, having, in combination, vamp trimming knives, and means acting on the projecting edge of the vamp of a lasted shoe in proximity to the knives to bend the vamp inwardly and force the bent-in portion relatively to the shoe in the direction of feed."

This new upper-trimming machine also embodied the guiding roll which was a characteristic feature of the machine of the Ashton patent No. 961,200, and a typical claim setting forth in broad terms this feature of the organization of both the Ashton machine and the Hadaway machine is the first claim of the Ashton patent No. 961,200, which has already been quoted.

The new model H upper-trimming machine also embodied in its organization improvements made by Hadaway at various stages of his experimental work, which are defined in broad terms in other Hadaway patents, No. 968,553, August 30, 1910, Hadaway, and 968,554, August 30, 1910, Hadaway. A typical claim of the first of these patents is the following:—

"11. A vamp trimming machine, having, in combination, a vamp trimming knife, a knife co-operating therewith arranged to extend inside of the vamp of a lasted shoe, and a guide separate from the knives, arranged to bear on the sole inside of the lip and raise the

vamp and direct it between the cutting edges of the knives, substantially as described."

A typical claim of patent No. 968,554 is the following:—

"8. A vamp trimming machine, having, in combination, a trimming knife for trimming the edge of the vamp, a co-operating knife arranged to extend inside of the vamp of the lasted shoe, and means acting on the vamp in front of said co-operating knife to raise the vamp and direct it between the cutting edges of the knives."

Four hundred and twenty-nine of the present commercial upper trimming machines, known as "Trimming Machine, Model H, Rex Upper", have been put out by the United Company through its pulling over department. One of these machines will easily take care of as many shoes as are welted upon four or five welt-sewing machines.

#### PULLING AND RESETTING MACHINE : GOODYEAR TACK.

Referring now to the other operation which, as was stated in the early part of my answer to this question, has to be performed after the operation of the lasting machine before the shoe is in condition to have the welt attached to it by the welt-sewing machine, it is the general practice to remove the lasting tacks which are inserted during the lasting operation to hold the upper in lasted condition. As has been explained, these lasting tacks, if allowed to remain in the shoe, cause prohibitive expense through breakage of needles on the welting machine; as well as for other important reasons.

It is important, however, that after the lasting tacks are removed the upper shall be retained in lasted position until the welt and the upper are together secured to the insole in the welt-attaching operation. It was accordingly the general practice, up to two or three years ago, and is still the practice in some factories, to insert lighter tacks known as "stay tacks" at the time the lasting tacks are pulled, to hold the upper in lasted position during the welting operation, that is, until the upper is permanently secured to the insole. Prior to February, 1899, there was no commercial machine for pulling the lasting tacks which had any provision for inserting any kind of fastening to hold the upper properly in lasted

condition after the lasting tacks had been pulled. The inventors of the Goodyear Shoe Machinery Company had done some experimental work with a view to producing such a machine, but the experimental machine had not reached a commercial condition in February, 1899. After the organization of the United Company, its inventors continued the experimental work which had been begun by the Goodyear Company, and beginning with the first experimental machine which is shown in patent No. 864,532, August 27, 1907, Hadaway, granted on an application filed November 6, 1899, a number of experimental machines were built in succession in the progress toward a satisfactory commercial machine. It proved a serious problem to organize a machine which would first pull the lasting tacks properly and pull them in such a manner as not to throw them all over the factory; and secondly, insert the stay tacks properly; and thirdly, insert the stay tacks only when and where desired by the operator. However, after experimental work extending over a period of some ten years, there was produced and put into commercial use in November, 1910, a satisfactory commercial machine for pulling the lasting tacks and for inserting a less number of stay tacks to hold the upper for the welting operation. The commercial machine which is known as "Pulling and Resetting Machine, Goodyear Tack" is constructed substantially as shown in patent No. 1,049,474, January 7, 1913, Hadaway (application filed April 8, 1911). Although the specific construction of the stay tack-driving mechanism is not disclosed in any patent which has as yet been granted, the specific construction of the tack-pulling mechanism is constructed as shown in the drawings of patent No. 1,013,944, January 9, 1912, MacKenzie (application filed April 8, 1911).

The general organization of this tack pulling and resetting machine is set forth in broad terms in the claims of the first patent to which reference was made in discussing this machine, No. 864,532, August 27, 1907, Hadaway, of which typical claims are the following:—

"25. In a machine for preparing shoes for sewing, the combination with a tack pulling tool, of a downhold bearing against the

edge of the upper inside and adjacent to the line of tacks to be pulled, substantially as described.

"26. In a machine for preparing shoes for sewing, the combination with tack pulling mechanism for pulling lasting tacks and tack driving mechanism for driving holding tacks, of means for holding the upper of the shoe in position while the lasting tacks are being pulled and until the holding tacks are driven, substantially as described."

"38. A machine for operating on lasted shoes, comprising the combination with automatic means for withdrawing the lasting tacks, of means for driving stay tacks at will while removing said lasting tacks."

An important feature of the organization of the tack-pulling mechanism of this machine is claim 4 of patent No. 746,306, December 8, 1903, Eaton, which is as follows:—

"4. In a tack pulling machine, the combination of a movable tack puller and a guard or foot provided with an abutment arranged transversely to the line of movement of said tack puller and against which the tacks are held, substantially as described."

The organization enabling the tack-pulling mechanism of the machine to pull the lasting tacks of varying diameters is defined in the claim of patent No. 960,294, June 7, 1910, Eppler. A typical claim of this patent is the first:—

"1. A tack pulling machine, having, in combination, a tack pulling jaw, a jaw co-operating therewith, mechanism acting independently of the tacks for relatively actuating the jaws to engage and pull a tack and yielding means to permit the jaws to accommodate themselves to tacks of different diameters."

The general organization of the tack-driving mechanism with relation to the tack-pulling mechanisms which insured the proper location and positioning of the stay tacks is defined in claims of patent No. 1,049,474, January 7, 1913, Hadaway, granted on an application filed April 8, 1911, and of the many claims of this patent directed to this general organization, a typical claim is the first:—

"1. A tack pulling and resetting machine having, in combination, a tack pulling tool, a tack driving plunger adjacent thereto, the tack pulling tool and the tack driving plunger having tack pulling and tack driving movements respectively lying in planes

inclined to one another and extending in the direction of feed, and means co-operating with the plunger to deflect the course of the tack into a plane substantially parallel to the plane of the tack pulling movement."

The stay tack-driving mechanism illustrated in this Hadaway patent No. 1,049,474 was also improved upon by mechanism which is not as yet shown in any granted patent in the form in which it is embodied in the commercial machine. Patent No. 1,049,474 also contains claims to the general organization of the tack-pulling mechanism finally adopted in the commercial machine. A typical claim of this patent directed to this organization is the sixth:—

"6. A tack pulling and resetting machine comprising a jaw supporting arm, a crank directly connected to one end of the arm, an oscillatory supporting link pivotally connected to the arm intermediate its ends, a tack pulling jaw depending from the free end of the arm and having its tack engaging end directed toward the crank, and means for rotating the crank in a direction to cause the jaw to move forward over a tack and pull the tack on its backward stroke."

Further improvements which were made in the progress of this machine toward commercial success are defined in the claims of patent No. 1,011,773, December 12, 1911, Hadaway, granted on an application filed September 9, 1905. Typical claims of this patent are the following:—

"1. A tack pulling machine, having, in combination, a tack pulling device, means for actuating said device to engage a projecting lasting tack and remove the tack from the shoe, and means engaging the upper on opposite sides of the tack constructed and arranged to guide the tack transversely to the plane of movement of the tack pulling device into position to be acted upon by the tack pulling device."

"11. A tack pulling machine, having in combination, a tack pulling device, a stationary ejecting device for removing a tack from the tack pulling device, and means for actuating the tack pulling device to remove a projecting lasting tack from a shoe and bring the tack into engagement with the ejecting device."

#### STAPLING MACHINE: GOODYEAR UPPER.

The United Company also put out another machine for removing lasting tacks from welt shoes, which was first supplied to man-

ufacturers in November, 1912. This machine, however, was especially devised for use in connection with a machine known as "Stapling Machine, Goodyear Upper", which machine does away with the necessity for inserting stay tacks. In order that the discussion of tack-pulling machines may be complete, it will be necessary to explain briefly the purpose of this upper-stapling machine and the field which it occupies.

This upper-stapling machine, introduced in April, 1911, performed for the first time in the industry the operation of securing the lasted upper in position for the welting operation by driving a staple of soft, fine wire through the upper, lining and channel lip or rib, locating this staple just above the path of the needle of the welting machine in the subsequent welting operation, and just below the path of the knife of the inseam trimming machine in the subsequent inseam trimming operation. I produce a partially made shoe which has been operated upon by this upper-stapling machine, and to which a welt has been sewed on one side. The wire of which the staples are made is so fine that it is somewhat difficult to find the staples which have been inserted, although their clinched points can be seen inside of the outer lip of the insole, and the heads of one or two of the staples are visible on the outside of the upper.

[*Shoe having upper secured by stapling machine, Goodyear upper, is introduced in evidence, and marked "Defendants' Exhibit 175".*]

This upper stapling machine as first put out was constructed substantially as shown in patent No. 1,011,592, December 12, 1911, Drey (application filed October 3, 1910). Typical claims of this patent are the following:—

"9. A machine of the class described having, in combination, staple forming and inserting means arranged to insert a staple through the upper and insole channel lip of a lasted shoe while these parts are in their original lasted condition, and means constructed and arranged to enter into the angle of union between the feather of the insole and the channel lip for forcing the upper into said angle in advance of the staple inserting operation."

"13. A machine of the class described having, in combination,

fastening inserting means constructed and arranged to insert a fastening through the upper and insole channel lip of a lasted shoe, and means for forcing the upper into the angle of union between the channel lip and the feather of the insole before the fastening inserting operation begins, constructed to guide the fastening during the fastening inserting operation in such manner that it is inserted through the upper and channel lip above the path of operation of the needle of the welt.”

The method which is practiced in the manufacture of shoes, comprising as a step the insertion of staples by this upper-stapling machine, is defined in all of the ten claims of patent No. 1,023,555, April 16, 1912, Drey (application filed October 3, 1910), of which claims the first is typical: —

“ 1. That improvement in the art of making shoes which consists in lasting the upper over the edge of the sole and securing it in lasted position by temporary fastening means, permanently uniting the upper and the sole by inserting individual fastenings through the upper and channel lip of the sole while the shoe is in its original lasted condition, removing the temporary fastening means, and then uniting the upper and sole with stitches.”

The shoe, which is produced by the method defined in the claims of patent No. 1,023,555, and in the manufacture of which this upper-stapling machine is used, is defined in all of the eight claims of patent No. 1,068,867, July 29, 1913, Drey (application filed December 13, 1910). A typical claim of this patent is the eighth:

“ 8. A shoe, comprising an upper and an insole, staples of fine wire attaching said upper to said insole, a welt attached to said upper and insole by stitches which also serve to unite the upper and insole, said staples being located inside the inseam trimming line and having their outer ends covered by the welt and their inner ends covered by the inner channel lip.”

#### STAPLING MACHINE — MODEL B: GOODYEAR UPPER.

In the operation of the upper-stapling machine, as first put out, the workmen would sometimes, through carelessness, so operate the machine that a staple was not fully driven. To make the machine proof against improper operation through carelessness, and to incorporate other improvements which had been devised for the machine, it was reorganized and a new type of machine known as

"Stapling Machine, Model B, Goodyear Upper", was adopted on November 21, 1911. This reorganized machine embodies improvements defined in all of the seven claims of patent No. 1,059,984, April 29, 1913, Erickson and Cosgrove (application filed October 10, 1912), which shows the machine substantially as put out at the present time. A typical claim of this patent is the following:—

"1. A machine for attaching an upper to the channel lip or rib or shoulder of a sole, comprising, in combination, automatic staple inserting means, automatic staple forming means organized to form a staple after the operation of the inserting means and during the same cycle of operations of the machine, and to stop with the staple held in position to be acted upon by said inserting means during the next cycle of operation of the machine, means for pressing together the parts to be united and manually controlled means connected to said pressing means to operate said pressing means and having provision for further movement, after said pressing means has been operated, to actuate said automatic inserting means to cause said inserting means to drive the staple which has previously been formed by and is held in said forming means."

This reorganized machine adopted in November, 1911, as already stated, embodies further improvements, on which patents have not as yet been granted.

This upper-stapling machine, which performs an operation never before performed in the manufacture of shoes either by hand or by machine, affords shoe manufacturers several important practical advantages.

First, by the use of the machine a substantial saving is effected through avoidance of breakage of welt needles, which was caused frequently, usually a number of times every day, in the operation of each welt-sewing machine by the striking of the needle against a stay tack.

Second, since the staples are of fine wire and are not visible in the finished shoe, it is not necessary to remove them, and, in fact, it is desirable to leave them in the shoe, as they reinforce the inseam. Accordingly, the operation of pulling stay tacks is rendered unnecessary by the operation of the machine, effecting a saving to the manufacturer of the cost of the operation of pulling stay tacks.

Third, since the staples are inserted before the lasting tacks are pulled, there is no opportunity for the upper to slip out of position. In the method of manufacturing shoes generally followed prior to the introduction of this upper-stapling machine, it was the usual practice to allow shoes to stand for twenty-four hours after they had been lasted before pulling the lasting tacks, in order that the upper might become "set", to avoid slipping back of the upper and undoing to that extent of the lasting operation when the lasting tacks were pulled and the stay tacks inserted. When the upper-stapling machine is used it is not necessary to wait until the upper is "set", because the staples are inserted before the lasting tacks are drawn, and effectively hold the upper so that the lasting tacks can immediately be pulled without any delay after the lasting operation. As the shoe can immediately be welted after the lasting and stapling operation, there is a saving in the average shoe factory of at least twenty-four hours of the time formerly required in the manufacture of the shoe, which, among other advantages, increases substantially the efficiency of the manufacturer's supply of lasts.

By way of concrete illustration of the benefits derived by the manufacturer from the use of the Goodyear upper-stapling machine, in one factory where about 3000 pairs of shoes are made every day, and which is fully equipped with the upper-stapling machines, the saving which has been, and is now being, effected by the use of this machine, due chiefly to preventing the breakage of welter needles, to dispensing with the operation of pulling stay tacks and to saving of time and labor, amounts to from twenty dollars to thirty dollars per day.

#### PULLING MACHINE: GOODYEAR UPPER TACK.

Since when the Goodyear upper-stapling machine is used there are no stay tacks to be pulled, the only tack-pulling operation which is needed is the pulling of the lasting tacks, and the United Company has developed, and supplies to manufacturers for use in connection with the upper stapling machine, a machine known as the "Pulling Machine, Goodyear Upper Tack", which comprises sub-

stantially the same tack-pulling organization as the pulling and resetting machine, Goodyear tack, which has been discussed in an earlier portion of this answer. All of the claims which have been referred to in connection with patents defining the organization of the tack-pulling and resetting machine, which are directed to the tack-pulling mechanism of that machine, define mechanisms which are embodied in this machine, pulling machine, Goodyear upper tack. Those patents are:—

- No. 746,306, December 8, 1903, Eaton.
- No. 960,294, June 7, 1910, Eppler.
- No. 1,011,773, December 12, 1911, Hadaway (application filed September 9, 1905).
- No. 1,013,944, January 9, 1912, MacKenzie (application filed April 8, 1911).
- No. 1,049,474, January 7, 1913, Hadaway (application filed April 8, 1911).

The organization of this machine also is broadly defined in claim 25 of patent No. 864,532, August 27, 1907, Hadaway, as follows:—

"25. In a machine for preparing shoes for sewing, the combination with a tack pulling tool, of a downhold bearing against the edge of the upper inside and adjacent to the line of tacks to be pulled, substantially as described."

Of the machines which I have been discussing, the company had put out, up to March 1, 1913, the end of the company's last fiscal year, 123 pulling and resetting machines, Goodyear tack, and 156 of the stapling machines, Goodyear upper. Two of the upper-stapling machines have an average capacity equal to that of five or six welt-sewing machines.

#### PULLING MACHINE: GOODYEAR INSOLE TACK.

Another tack-pulling operation must be performed upon the shoe before the out-sole can be attached. In the manufacture of probably all welt shoes which are made the insole is secured to the last before the assembling and pulling over operations, which precede the lasting operation, by means of tacks which must be pulled before the out-sole is attached. Such tacks are shown in many

of the defendants' exhibits, of which one is Defendants' Exhibit No. 7.

At the same time that these insole tacks are removed from the shoe, stay tacks, if any were inserted when the lasting tacks were removed, must also be pulled.

Prior to February, 1899, there was no commercial machine offered to shoe manufacturers for performing either of these operations, that is, the pulling of insole tacks or the pulling of stay tacks, and it was at that time the universal practice to remove insole and stay tacks by hand tools.

In 1904 the inventors of the United Company began experimental work with a view to producing a machine for pulling insole and stay tacks. The production of a machine for performing these operations presented serious problems because the insole tacks are driven with their heads either flush with the face of the insole or imbedded below the surface and their points are driven well into the last. The pulling of the stay tacks also presented an entirely different problem from that of pulling lasting tacks, because while the lasting tacks are, in the lasting operation, always inserted with their heads projecting around the shank and forepart of a welt shoe, so that the tool of a lasting tack-pulling machine can readily get under the heads of the tacks, the welt is attached to the shoe after the stay tacks have been driven, and at the time when the stay tacks are to be removed their heads are often flush with, or below, the adjacent edge of the welt. Accordingly, a machine for pulling stay tacks must be so organized that the tack-removing tool can dig down below the projecting edge of the welt to get under the head of the stay tack, while at the same time the operation must be so performed as to avoid any liability of damaging the inseam or the welt.

The United Company's inventors were at work on these problems for some five years. After this long period of experimenting there was finally produced in February, 1909, a commercial machine which embodied the better part of the various improvements which had been made in a number of experimental machines which had been built from time to time during the experimental period.

This machine was known as "Pulling Machine, Goodyear Insole Tack". Although the machine was put into commercial use, as stated, in February, 1909, it had not even then reached its final commercial form as it is now put out, and several different types of tools for pulling both the insole tacks and the stay tacks were used on the machine, in turn, for more than a year. As finally put out the machine in its ultimate commercial form, and as it is now being put out, embodies mechanisms defined in the claims of a number of patents. Both the insole tack-pulling tool and the stay tack-pulling tool in all forms in which the tools have been used since the machine was first put out in February, 1909, embody an improvement defined in reissue patent No. 13,581, June 24, 1913, Miller (original patent 897,003, August 25, 1908). Claim 2 of this reissue patent is as follows: —

"2. In a tack pulling machine for lasted shoes, the combination of a rotary shaft, a wheel on said shaft having a circumferentially grooved periphery, and an extract or blade on said wheel extending crosswise of its periphery, for the purpose set forth."

An important characteristic of the insole tack-pulling mechanism is defined in the claims of patent No. 968,755, August 30, 1910, Eppler, of which a typical claim is the fifteenth: —

"15. A machine for pulling insole tacks from a lasted shoe, having, in combination, a tack pulling tool provided with a working end shaped to dig into the sole of a shoe and pass beneath the head of a tack, mechanism for actuating the tool to dig into the sole and engage a tack and pull the tack from the shoe, and means for securing the proper presentation of the shoe to the tool."

Passing over several patents defining in their claims forms of tack-pulling tools which were used for a while and then superseded, the insole tack-pulling mechanism as finally adopted and now used in the commercial machine is defined in the claims of patent No. 995,670, June 20, 1911, Hadaway, of which typical claims are the first and fourth: —

"1. A rotary tack pulling tool, having, in combination, a puller provided with a transverse tack pulling edge and an eccentric periphery back of said edge, a guard flange at one side of the puller, and means permitting adjustment of the puller across the axis of rotation of the tool, substantially as described."

"4. A rotary tack pulling tool, having, in combination, a puller provided with a transverse tack pulling edge and an eccentric periphery back of said edge, and a guard flange at one side of the puller provided with an opening for the ejection of waste materials, said opening having its end at the heel of the puller beveled outwardly to assist the materials in passing out, substantially as described."

In patent No. 1,016,328, February 6, 1912, Hadaway (application filed April 14, 1909), which disclosed an insole tack-pulling tool used only experimentally, is a claim which defines an improvement embodied in the commercial insole tool, as follows:—

"9. A tack pulling machine, having, in combination, a tack pulling tool provided with a blade extending crosswise of its periphery and having a convex edge adapted to dig under the head of a sole tack, and a work supporting guard, substantially as described."

The commercial form of said tack puller is shown in the drawings of patent No. 1,028,455, June 4, 1912, Hadaway (application filed February 23, 1910), and defined in all of the five claims of that patent. Typical claims which indicate the problems which had to be solved in the production of a commercially satisfactory stay tack-pulling device, and also indicating the solution of the problems in the commercial machine, are the first and second, which are as follows:—

"1. A rotary tack pulling tool provided with one or more tack pulling blades, and guard flanges projecting beyond their working edges between which the inseam is fed longitudinally, substantially as described.

"2. A rotary tack pulling tool provided with tack pulling blades, guard flanges on opposite sides of the blades projecting beyond their working edges between which the inseam is fed longitudinally, and an intermediate flange to press on the inseam beyond which the working edges of the blades project, substantially as described."

This machine is put out by the United Company through its Goodyear Department, and at the end of the company's last fiscal year, March 1, 1913, there had been put out, since the introduction of the machine in 1909, 318 of these machines, pulling machine, Goodyear insole tack. One of these machines will take care of the output of five or six welting machines when the machine is used to pull both the insole and stay tacks. In factories where the Good-

year upper-stapling machine is used, so that there are no stay tacks to be pulled, this insole tack-pulling machine will remove the insole tacks from shoes which have been welted on a larger number of welt-sewing machines.

**PULLING AND TRIMMING MACHINE: INSOLE TACK AND TURN SHOE.**

The machines which have heretofore been discussed in this answer were devised and are adapted particularly for use on welt shoes. After these machines had been developed into commercial form and were being supplied to manufacturers, the inventors of the United Company directed their attention to the development of a machine for pulling lasting tacks from turn shoes. The lasting tacks on turn shoes present different problems for a machine from the lasting tacks of welt shoes. In the first place, in the lasting of turn shoes the lasting tacks must not be driven through the sole, since, if they were, the tacks would pass out of the sole on the grain side, forming holes in the grain side of the sole, which would deface it and seriously impair the appearance and salability of the finished shoe. Also, a much lighter lasting tack is used, lighter even than the stay tacks which were formerly, and are still to some extent, inserted in welt shoes after the pulling of the lasting tacks.

The first commercial machine ever produced, so far as I know, for the pulling of lasting tacks from turn shoes was put out by the United Company on December 6, 1911, being known officially as "Pulling and Trimming Machine, Insole Tack and Turn Shoe". The lasting tack-pulling mechanism of this machine is shown in the drawings, described in the specifications and defined in the four claims of patent No. 931,946, August 24, 1909, Miller. Typical claims of this patent are the following:—

"1. A rotary tack pulling wheel provided with a peripheral groove, with a tack pulling blade extending across said groove, and with a recess to admit a tack fed transversely to the wheel into the path of the blade."

"3. A rotary tack pulling wheel provided with a spiral groove on its periphery and with a plurality of tack pulling blades extending across said groove."

In addition to this patent No. 931,946 several of the patents which have been referred to in connection with pulling machine, Goodyear insole tack, contain claims defining mechanisms embodied in this machine for pulling lasting tacks of turn shoes. These patents are :

Reissue No. 13,581, June 24, 1913 (original patent No. 897,003, August 25, 1908), Miller.

No. 968,755, August 30, 1910, Eppler.

No. 995,670, June 20, 1911, Hadaway.

No. 1,016,328, February 6, 1912, Hadaway (application filed April 14, 1909).

Of the machines which have been discussed in the foregoing answer, the following machines are put out by the United Company through its pulling over department:—

“Trimming Machine, Model A, Rex Upper”, superseded by

“Trimming Machine, Model H, Rex Upper”,

while the other machines discussed are put out by the United Company through its Goodyear department, namely :—

“Pulling and Resetting Machine, Goodyear Tack”;

“Stapling Machine, Goodyear Upper”, superseded by

“Stapling Machine, Model B, Goodyear Upper”;

“Pulling Machine, Goodyear Upper Tack”;

“Pulling Machine, Goodyear Insole Tack”;

“Pulling and Trimming Machine, Insole Tack and Turn Shoe”.

Mr. WEBSTER. The answer is objected to because the same relates to matters in reference to which no evidence has been introduced by the petitioner, and therefore the answer relates to matter which is inadmissible, incompetent and irrelevant as to any of the issues involved herein. The answer is further objected to because it does not relate to matters in reply to, or in defence of, evidence introduced before the examiner by the petitioner. The petitioner further objects to the answer in so far as it relates to mechanisms not shown in patents and referred to in the claims of such patents as were issued prior to the filing of the petition herein.

*Int.* 100. Have you collected under one cover the patents referred

to by you in your last answer as relating to upper trimming and tack-pulling machines?

*Ans.* I have.

*Int.* 101. Will you please produce it?

*Ans.* I produce a volume comprising all of the patents mentioned by me in my testimony relating to upper trimming and tack-pulling machines.

[*Volume of patents relating to upper trimming and tack-pulling machines is introduced in evidence, and marked "Defendants' Exhibit 176".*]

**Mr. WEBSTER.** The petitioner objects to the introduction as exhibits of all patents issued after the date of the filing of the petition herein.

*Int.* 102. Will you please give the number, date and name of the patentee of the several patents contained in the volume which has just been introduced in evidence as Defendants' Exhibit 176?

*Ans.* No. 746,306, December 8, 1903, Eaton.

No. 864,532, August 27, 1907, Hadaway.

No. 897,003, August 25, 1908, Miller (reissued).

Reissue No. 13,581, June 24, 1913, Miller (original patent No. 897,003, August 25, 1908).

No. 922,697, May 25, 1909, Hadaway.

No. 931,946, August 24, 1909, Miller.

No. 960,294, June 7, 1910, Eppler.

No. 961,200, June 14, 1910, Ashton.

No. 968,553, August 30, 1910, Hadaway.

No. 968,554, August 30, 1910, Hadaway.

No. 968,755, August 30, 1910, Eppler.

No. 995,670, June 20, 1911, Hadaway.

No. 1,011,592, December 12, 1911, Drey (application filed October 3, 1910).

No. 1,011,773, December 12, 1911, Hadaway (application filed September 9, 1905).

No. 1,013,944, January 9, 1912, MacKenzie (application filed April 8, 1911).

No. 1,016,328, February 6, 1912, Hadaway (application filed April 14, 1909).

No. 1,023,555, April 16, 1912, Drey (application filed October 3, 1910).

No. 1,028,455, June 4, 1912, Hadaway (application filed February 23, 1910).

No. 1,049,474, January 7, 1913, Hadaway (application filed April 8, 1911).

No. 1,059,984, April 29, 1913, Erickson and Cosgrove (application filed October 10, 1912).

No. 1,068,867, July 29, 1913, Drey (application filed December 13, 1910).

[*Adjourned to 10 A. M. Friday, October 17, 1913.*]

BOSTON, MASS., October 17, 1913.

*Int.* 103. To bring the unlasted upper of a shoe into its lasted position what operations, if any, are necessary besides the operation performed by the lasting machine which you have already described? If any further operations are necessary, please state what they are, how they were performed prior to 1899, and what, if anything, has been done by the United Company since 1899 to provide shoe manufacturers with machines for performing such operations. If such machines form the subjects-matter of Letters Patent of the United Company, state the patents.

Mr. WEBSTER. The question is objected to by counsel for the petitioner because of its calling for evidence or testimony in reference to matters which have not been touched upon in the evidence or testimony submitted by the petitioner and being in no sense in reply to, or in defence of, evidence of the petitioner.

#### PULLING OVER.

*Ans.* In the manufacture of practically all shoes it is necessary that the shoe be "pulled over" before it goes to the lasting machine. The operation of pulling over a shoe comprises pulling the upper over the last by means of grippers on each side of the forepart near the tip seam and at the toe, and securing the upper at

these points by tacks. Before the upper is secured the workman must carefully inspect the upper and assure himself that the "lines" of the upper are properly located on the last; that is, the tip seam must be straight and must at all points be at the proper distance from the end of the toe, and the lacing slit must not be pulled out of its proper position toward either side of the shoe. As this operation was performed just prior to February, 1899, it was exclusively a hand operation. In performing the operation the workman would first pull the upper at the toe by hand pincers and tack it at that point; then pull the upper on one side and fasten it there, pull the upper at the other side and fasten that portion of the upper, and next turn the shoe over to examine the tip seam and lacing slit to determine whether they were properly located. If the tip seam were not straight, or not properly located, as above explained, at the same distance at all points from the end of the toe, or if the upper were distorted so as to displace the lacing slit, he had to remove one or more, sometimes all, of the tacks which he had driven to secure the upper and try again, sometimes repeating this operation several times before the lines of the upper were properly located on the last. This operation is critical because it is at this time that the lines of the upper are permanently fixed.

It was the almost universal opinion in the industry prior to 1899, and, in fact, for several years after that date, that this operation of pulling over the shoe was the one operation in the manufacture of shoes which could never be performed by machine, owing to the necessity for adjusting the lines of the upper during the pulling-over operation. However, the Consolidated and McKay Lasting Machine Company had, some time prior to the formation of the United Shoe Machinery Company in February, 1899, undertaken to produce a pulling-over machine if it were possible to develop a machine which would perform the operation acceptably.

Postponing for later detailed discussion the problems which had to be dealt with in the production of a commercial pulling-over machine, I will now refer briefly to the successive steps in the experimental work toward the production of a pulling machine

which could be successfully used to perform this critical operation in the manufacture of shoes. The experimental work, begun by the Consolidated & McKay Lasting Machine Company, was taken up by the United Shoe Machinery Company immediately after its organization in February, 1899, and by September, 1899, a machine was produced, the third experimental machine which had been constructed, which was deemed worthy of a shoe factory trial. From that machine were prepared drawings of patent No. 633,777, December 11, 1900, McFeely. While the experimental use of this first machine of September, 1899, was sufficient to demonstrate that there was hope of producing a machine which would be commercially successful, the machine itself fell short of commercial success. Continuous experimental work was done upon the machine, and its next stage is represented by patent No. 950,701, March 1, 1910, McFeely (application filed October 31, 1901). A number of experimental machines constructed as shown in the drawings of this patent No. 950,701 were put out for shoe factory trials under commercial conditions. The lessons learned in the experimental use of these machines led to the development of the machine in its third stage, and in June, 1903, there was put out a machine constructed as shown in patent No. 1,029,387, June 11, 1912, McFeely (application filed March 28, 1903).

#### PULLING OVER MACHINE — MODEL A : REX.

When this machine was produced the pulling-over machine was, for the first time, an assured success. Up to this time, June, 1903, the ultimate success of the pulling-over machine had been problematical. All pulling-over machines put out by the United Company since June, 1903, have embodied practically all of the mechanisms set forth in the claims of this patent No. 1,029,387.

Referring now to some of the many serious problems which had to be dealt with in the development of a commercially pulling-over machine, probably the most important were, first, the provision of practical means for adjusting the upper on, and in relation to, the last, after the upper had been put under pulling strain, to properly locate the lines of the upper so that the tip seam would be straight

and would be located at all points at the same distance from the end of the toe, and to assure proper location for the lacing slit; and, secondly, the general problem of performing all of the machine's operations, the pulling of the upper, the adjusting of the upper while under strain, and the securing of the upper in properly adjusted condition in such manner and so quickly that it would be advantageous to use the machine instead of pulling over by hand.

The first of these problems was met, in the first commercially successful machine shown, as I have stated, in patent No. 1,029,-387, June 11, 1912, McFeely (application filed March 28, 1903), by so organizing the machine that the two pairs of grippers which simultaneously pulled the upper on opposite sides adjacent to the tip seam could be quickly operated to adjust the upper in any desired manner over, and with relation to, the last. The grippers could thus be manipulated either to straighten a misplaced tip seam or to adjust into proper position an incorrectly located lacing slit. The second of the problems above referred to was met by so organizing the machine that it pulled at the toe and on opposite sides of the shoe substantially simultaneously and, after the upper had been adjusted, simultaneously wiped the portions of the upper held by the grippers over upon the bottom of the last, and simultaneously drove tacks at the toe and at both sides of the shoe to hold the upper in pulled-over position. Each of these operations was performed almost instantaneously with a dwell between the two groups of operations to afford opportunity for adjustment of the upper while held under strain by the grippers.

The general principles of operation above indicated were all present in the experimental machine of the first patent, No. 663,-777, December 11, 1900, but in the experimental use of that machine and of its successor, the machine of patent No. 950,701, March 1, 1910 (application filed October 31, 1901), it was found that many changes in, and additions to, the organization of the machine of each patent in turn must be made to adapt the machine for commercial use.

An explanation of all the improvements which had to be made

before the experimental machine of patent No. 663,777 was developed into the commercial machine which was produced, as has been stated, in June, 1903, and was constructed as shown in patent No. 1,029,387, and the reasons why each improvement had to be made, and how it solved the problems which it was to meet, would be a long story. It will, perhaps be sufficient to quote claims of patents disclosing the more important features of the organization of the machine of June, 1903. These patents were as follows:—

No. 663,777, December 11, 1900, McFeely.

No. 791,986, June 6, 1905, McFeely.

No. 950,701, March 1, 1910, McFeely (application filed October 31, 1901).

No. 988,582, April 4, 1911, McFeely (application filed October 31, 1901).

No. 1,029,387, June 11, 1912, McFeely (application filed March 28, 1903).

No. 1,030,264, June 18, 1912, McFeely (application filed October 31, 1901).

No. 1,030,522, June 25, 1912, McFeely (application filed March 28, 1903).

This machine of June, 1903, also borrowed from the hand-method lasting machine art some features of its mechanism which are defined in the claims of patents—

No. 597,321, January 11, 1898, Ladd;

No. 893,331, July 14, 1908, Ladd (application filed April 13, 1901);

No. 910,251, January 19, 1909, Wheeler (application filed August 7, 1901).

Nearly all of the 186 claims of the first patent on the above list, No. 663,777, December 11, 1900, McFeely, describe mechanism embodied in the commercial machine of 1903 and always since incorporated in the machine. Typical claims are as follows:—

"1. A pulling over machine comprising in combination means for pulling the upper at different points, means for placing said pulled upper over the inner sole, means for securing said overturned upper to the inner sole, the combination being adapted for

working on uppers placed loosely over a last, whereby said uppers are pulled over the last and secured at different points in position for lasting."

" 28. A pulling over machine comprising means for automatically pulling the upper first longitudinally of the last and then transversely of the last."

" 76. A last supporter adapted for resting on the bottom of a last, in combination with means for pulling the upper over the last, and independent means, becoming operative after the upper is pulled, to support the last against the operations of securing the upper to the inner sole."

" 170. Means for pulling an upper over a last, combined with means for moving said pulled upper around said last longitudinally.

" 171. Means for pulling an upper over a last, combined with means for moving said pulled upper around said last transversely."

" 173. A pulling over machine comprising means for stretching the upper over and holding it upon the last, with means for adjusting the pulled over upper on the last."

A majority of the ninety-four claims of patent No. 950,701, March 1, 1910, McFeely (application filed October 31, 1901), described mechanisms embodied in the commercial machine of 1903, and always since incorporated in the machine. Typical claims are the following:—

" 12. In a machine of the class described, means to engage an upper, and means to sink the last into the upper and to actuate the last longitudinally during the sinking movement."

" 20. Means for pulling an upper over a last at opposite sides of the shoe simultaneously, in combination with automatic means for moving an inner sole upon the last."

" 31. In a pulling over machine, mechanism for pulling an upper over a last, combined with means for clamping the pulled over upper against the inner sole, and mechanism for securing the upper to the inner sole."

" 52. In a machine of the class described, the combination with means for pulling an upper over a last, of a plurality of pressers, actuating mechanism comprising independently yielding means co-operating with each presser for forcing the pressers against the upper on opposite sides of the last and means for insuring uniform pressure on each side of the last."

All of the sixty-six claims of patent No. 1,030,264, June 18, 1912, McFeely (continuation of application filed October 31, 1901), describe mechanisms embodied in the commercial machine of 1903,

and always since incorporated in the commercial pulling-over machine. A typical claim of this patent is the fifty-third:—

" 53. In a gripper mechanism, jaws for gripping and pulling stock, and actuating mechanism therefor constructed and arranged to be disconnected from the jaws while the stock is under tension."

Nearly all of the forty-two claims of patent No. 988,582, April 4, 1911, McFeely (original application filed October 31, 1901), recite mechanisms embodied in the commercial machine of 1903, and always since incorporated in the commercial machine. Claim 2 of this patent is as follows:—

" 2. In a machine for working an upper over a last, the combination with a wiper, automatically operating means to actuate the wiper inwardly and downwardly for wiping the upper over the bottom of the last, and means for supporting the last unyieldingly to the action of the wiper, of means for allowing variation of the altitude of the wiper in relation to the bottom of the last during the overwiping operation."

Over 100 claims of patent No. 1,029,387, June 11, 1912, McFeely (application filed March 28, 1903), which shows, as already stated, the first really successful commercial pulling-over machine, describe mechanisms which have always been embodied in the machine ever since it was adopted. One of the most important improvements in the organization of the machine set forth in the claims of this patent was a rest for the heel of the last which was self-adjustable to adapt it for properly supporting the rights and lefts of crooked lasts, and which was automatically movable into and out of proper position for engaging and supporting the heel end of a shoe. This improvement overcame a difficulty which had been experienced in the experimental use of the earlier models of the pulling-over machine, owing to the backward strain exerted upon the last by the toe grippers, the toe wiper and the mechanism for driving the tacks at the toe, all of which tended to force the last backwardly. Operators of the earlier machines had endeavored to meet this strain by grasping the shoe at the heel with one hand, but this taxed the operator's strength unduly and, moreover, he frequently did not hold the shoe firmly enough to prevent objectionable backward movement of the last. Such slipping back of

the last interfered with practically every operation performed by the machine and prevented satisfactory pulling over. That difficulty was completely overcome by the improvements of this patent No. 1,029,387 which made the machine commercially satisfactory. This improvement, and other important improvements, are set forth in more than 100 of the claims of this patent No. 1,029,387, of which the following are typical:—

“2. A pulling over machine having, in combination, means for gripping an upper at the toe and at opposite sides of the forepart and pulling it over a last, a rest for the heel of the last, and means for automatically pressing said rest forwardly into position to support the last against longitudinal rearward displacement by the toe pulling means.”

“13. In a pulling over machine, means for pulling an upper over a last, in combination with last supporting means having inclined contact faces for engaging opposite sides of the last, and means for automatically actuating said supporting means into engagement with the last, said supporting means being automatically adjustable laterally according to the position of the portion of the last engaged thereby.”

“33. Means for pulling an upper over a last, in combination with automatic means adapted for moving an inner sole upon the last, said means being arranged for adjustment to move the inner sole either forwardly or backwardly.”

“106. A pulling over machine having, in combination, pulling over means, and shoe supporting means which includes a rest for the heel end face of the last.”

The mechanism described in patent No. 1,030,522, June 25, 1912, McFeely (application filed March 28, 1903), and set forth in the claims of that patent, comprises means for so actuating the grippers as to pull the uppers away from the edge of the last while it is being stretched, in order to reduce the friction on the upper and prevent the liability of curling upward the edge of the insole, and also comprises two pairs of grippers for engaging the upper on each side, with means for equalizing the strain of each pair on the same side so that they shall operate alike.

Of the forty-nine claims of this patent, typical claims are the seventh and twelfth:—

“7. In a pulling over machine, grippers for gripping an upper

and pulling it over a last, means for relatively actuating the grippers and last for pulling the upper, and means for holding the upper away from the edge of the last while it is being pulled."

" 12. In a grippers mechanism for pulling an upper over a last, a plurality of pairs of grippers for engaging the same side of the upper, a single operating means for closing and lifting said grippers, and equalizing means whereby the several pairs of grippers are caused to put the different portions of upper acted upon under the same strain."

Proceeding now to a discussion of the improvements which have been made in the pulling-over machine as put out for commercial use in 1903, and as shown in patent No. 1,029,387, the development of the machine during 1904, 1905 and 1906 and the improvements adopted in the machine from time to time during that period are shown and described in the claims of the following patents:—

No. 959,874, May 31, 1910, McFeely (application filed October 12, 1906).

No. 1,001,701, August 29, 1911, Spencer (application filed August 15, 1907).

No. 1,002,421, September 5, 1911, McFeely (application filed May 26, 1904).

No. 1,002,422, September 5, 1911, McFeely (application filed October 12, 1906).

No. 1,007,766, November 7, 1911, Ashton (application filed August 2, 1907).

In 1908 and 1909 further improvements were made in the machine and have ever since been embodied in the regular organization of the machine, upon most of which patents have not been granted but for which it is expected that patent protection will eventually be obtained. All of the improvements made between 1903 and 1911 were adopted in the commercial pulling-over machine as soon as each improvement in turn had been embodied in commercially satisfactory mechanism. The commercial machine of 1911, embodying all of these improvements, was renamed "Pulling Over Machine, Model A, Rex", upon the introduction of the new model C machine, to which I shall presently refer.

Patents which have so far been granted, setting forth the organization of the model A pulling-over machine, are as follows:—

- No. 597,321, January 11, 1898, Ladd.
- No. 663,777, December 11, 1900, McFeely.
- No. 791,986, June 6, 1905, McFeely (application filed September 19, 1899).
- No. 893,331, July 14, 1908, Ladd (application filed April 13, 1901).
- No. 910,251, January 19, 1909, Wheeler (application filed August 7, 1901).
- No. 950,701, March 1, 1910, McFeely (application filed October 31, 1901).
- No. 959,874, May 31, 1910, McFeely (application filed October 12, 1906).
- No. 988,582, April 4, 1911, McFeely (application filed October 31, 1901).
- No. 1,001,701, August 29, 1911, Spencer (application filed August 15, 1907).
- No. 1,002,421, September 5, 1911, McFeely (application filed May 26, 1904).
- No. 1,002,422, September 5, 1911, McFeely (application filed October 12, 1906).
- No. 1,007,766, November 7, 1911, Ashton (application filed August 2, 1907).
- No. 1,029,387, June 11, 1912, McFeely (application filed March 28, 1903).
- No. 1,030,264, June 18, 1912, McFeely (application filed October 31, 1901).
- No. 1,030,522, June 25, 1912, McFeely (application filed March 28, 1903).
- No. 1,030,838, June 25, 1912, Ashton (application filed August 2, 1907).

**PULLING OVER MACHINE — MODEL C: REX.**

In March, 1911, there was first put out for commercial use a pulling-over machine which embodied so many improvements that it was designated as a new model, and is known as "Pulling Over Machine, Model C, Rex". While the fundamental principles of operation of the earlier types of the machine were continued in the

new model as set forth in all of the claims which I have quoted in this answer, there are incorporated in it many valuable improvements for which as yet but one patent has been granted. This patent is No. 1,055,016, March 4, 1913, Brothers (application filed September 23, 1908), claims of which describe in broad terms one of these improvements. Typical claims of this patent are the sixth and twenty-third :—

"6. A pulling over machine having in combination, side grippers, manually operable tip straightening means, and means including a single actuating member, adapted for movement by the operator to relieve the tension on the upper during the operation of the tip straightening means."

"23. In a pulling over machine the combination with oppositely disposed side grippers and power mechanism for operating them, of means, including a single actuated member, which may be employed by the machine operator at will to modify the rate at which the power driven side gripper pulling movement shall take effect."

The improvements broadly defined in this patent No. 1,055,016, March 4, 1913, Brothers, are embodied in the "New Model C Pulling Over Machine" in different mechanical constructions embodying many further improvements upon which it is expected that patent protection will eventually be obtained. Further improvements in the model C machine comprise provision for inserting more tacks on the outside of the shoe, where more are needed, than on the inside of the shoe, and means by which the operator can at will modify or, if desired, arrest the pulling by the grippers during their operation, which enables him to modify the straining action of the grippers in accordance with the needs of each shoe. These improvements, and others which are embodied in the model C machine which is now the United Company's standard commercial pulling-over machine for welt work, are not yet patented. It is anticipated, however, that patents will eventually be granted for all of these improvements. Since the introduction of the model C machine, which, as has been stated, is now the standard machine for welt work, the model A machine has been the standard machine for McKay sewed work. A reorganized machine for McKay sewed work, embodying all the improvements incorporated in the model

C machine which were adapted for a machine used on McKay sewed work, has recently been developed. This new machine has been adopted as a commercial machine and a number of these machines are in the course of construction and will shortly be supplied to manufacturers of McKay sewed shoes.

The organization of the model C pulling-over machine embodies mechanism set forth in the claims of all of the sixteen patents which have been enumerated as defined in the organization of the model A machine, except patent No. 1,030,838, and in addition to this patent the model C machine embodies the improvements set forth in patent No. 1,055,016, March 4, 1913, Brothers.

#### PULLING OVER MACHINE — MODEL B: REX.

In July, 1910, there was adopted for commercial use a combined pulling-over and lasting machine for turn work, which was the result of more than three years of constant experimenting. This machine is known as "Pulling Over Machine, Model B, Rex", and comprises improvements which are in part substituted for mechanisms on the model A pulling-over machine, and in part are additions to the organization of that machine. The machine comprises, generally speaking, means for pulling over a shoe and means for automatically lasting the forward portion of the shoe and securing it in lasted position, and mechanisms embodied in this machine are described in the claims of most of the patents which have been referred to in the discussion of the pulling-over machine, but no patents have yet been granted on the organization of a combined pulling-over and lasting machine, or upon the many improvements which have made this machine a commercially successful machine as a combined pulling-over and lasting machine for turn work. It is anticipated, however, that the machine will eventually receive patent protection.

All of the sixteen patents which have been enumerated as defining mechanisms embodied in the model A machine also define the organization of the model B machine except Nos. 1,007,766 and 1,030,838. In addition to those patents the model B machine embodies improvements set forth in the claims of patents numbered

584,192, June 8, 1897, Preston, and 999,327, August 1, 1911, McFeely.

I produce a McKay sewed shoe which was pulled over on the model A pulling-over machine.

[*Mckay sewed shoe pulled over on model A pulling-over machine is introduced in evidence, and marked "Defendants' Exhibit 177".*]

[*Answer to Int. 103 continued:*]

I also produce a welt shoe which has been pulled over upon the model C pulling-over machine.

[*Welt shoe pulled over on the model C pulling-over machine is introduced in evidence, and marked "Defendants' Exhibit 178".*]

[*Answer to Int. 103 continued:*]

The shoe which I now produce is a turn shoe which has had its forepart pulled over and lasted on the model B pulling-over machine.

[*Turn shoe having forepart pulled over and lasted on the model B pulling-over machine is introduced in evidence, and marked "Defendants' Exhibit 179".*]

[*Answer to Int. 103 continued:*]

In concluding the discussion of the pulling-over machine it may be well to state that interesting facts about this machine are: that it performs operations which, in February, 1899, and always before, had been performed by hand; that it performs these operations much better than they were ever performed by hand; that the nature of the operation is such that the machine is the most elaborate and highly organized machine now used in the manufacture of shoes; that nearly a million dollars was spent in the development of the machine before any revenue was derived from it; and that while each machine does enough work to supply at least two, and frequently three, lasting machines of any type in use, the demand for the pulling-over machine has been so great that 4180 machines had been put out prior to October 1, 1913; and that in its early years the development of the machine was so rapid that after an entirely successful machine had been produced the United Company voluntarily supplied the successful machine to manufacturers who had machines of the earlier models, and broke up for junk over

100 machines which had been built and put out less than three years before.

This machine is put out by the United Shoe Machinery Company through its pulling-over department.

While the pulling-over machine performed the greater and most important part of the work in preparing a shoe for the lasting operation, there still remained the operation of assembling the parts of shoes preparatory to the pulling-over operation, which still, after the introduction of the pulling-over machine, had to be performed by hand as it was performed in February, 1899, and always before that time. In fact, this assembling operation, together with the pulling operation, constituted portions of the work performed by the hand laster before the introduction of lasting machines.

#### ASSEMBLING.

Prior to the operation of the pulling-over machine, the parts of the shoe, comprising an insole, the upper and its lining, and a counter, which, as explained in my previous testimony, is a piece of stiffening material, as sole leather, inserted between the upper and lining to maintain the shape of the heel end of the upper during the wear of the shoe, must be gotten together about the last, adjusted to their proper relations, and secured at one or more points; and this step in the manufacture of the shoe is known as "assembling".

#### ASSEMBLING SPINDLE: REX.

As stated, this operation was always performed by hand until September, 1904, when the United Company first put out for commercial use a machine known as "Assembling Spindle, Rex", which represented the first step in the development of the present commercial assembling machine, and was constructed as shown in the drawings and described in all of the six claims of patent No. 893,-696, July 21, 1908, Ashton (application filed October 20, 1905). A typical claim of this patent is the first:—

"1. A machine for assembling parts of boots and shoes preliminary to lasting, comprising a last pivot arranged to support a last normally for free pivotal movement in an approximately horizontal

plane, and clamping mechanism arranged to hold the upper against the last at the heel and to hold the last simultaneously from movement upon said pivot."

While I have called the device shown in this patent No. 893,696 a machine, it was really an assembling spindle, as indicated by its name and by the claim which has just been quoted. It comprises a so-called "jack-spindle", on which the last was mounted, and a device for forcing the upper materials, including the counter, against the rear end of the last and holding the upper materials in that position while the operator drove tacks by hand through the upper, the flange of the counter, the lining and the insole. While this assembling spindle was useful in the hand operation of assembling, and over 200 of them were put out before the development of the present commercial machine, and while very likely manufacturers would still be using this assembling spindle if it had not been superseded by the present highly-organized commercial assembling machine, it seems today very crude in comparison with that machine. It did not automatically fasten the upper; it did not force the upper materials, including the flange of the counter, in over the bottom of the last at the rear end to prepare the upper materials to receive the fastening tack, and hence it rendered no assistance to the operator in shaping the edge of an unflanged counter; and, further, it rendered no assistance to the operator in holding the forward ends of the counter, and preventing frequent misplacing, which, as will be later explained, is an important function of the present commercial assembling machine.

#### ASSEMBLING MACHINE: REX.

In view of the crude character of this assembling spindle, and the desirability of an organization which would perform automatically all of the operations which, as I have just stated, the assembling spindle did not and could not perform, the United Company inventors proceeded to develop an organized power-operated assembling machine. Such a machine was produced and was first put out for commercial use in September, 1905. This was the first commercial machine ever constructed or used for assembling on a last the several parts of the upper in their proper relations to each

other and to the last, and securing such parts in their proper relations. Furthermore, this new machine performed all of these operations automatically. It held the forward ends of the counter closely pressed against the sides of the last, pressed the counter and upper into close relation to the heel end of the inner sole, drove a tack through the upper and counter into the rear end of the last to secure the parts against displacement relatively to each other or to the last, and it forced the upper materials and the edge of the counter over the rear edge of the last down upon the bottom of the last, and drove a tack through these parts and through the insole, clinching the end of the tack on the iron heel plate of the last, thus producing a shoe having its parts assembled on the last in proper relation to each other and ready for the pulling-over operation.

This assembling machine as first put out in September, 1905, was constructed substantially as shown in the drawings and as set forth in nearly all of the forty-eight claims of patent No. 1,023,794, April 23, 1912, Ashton (application filed August 15, 1906). Of those claims of this patent which describe broadly the organizations of both the original machine of 1905 and the present commercial assembling machine, typical claims are the first and thirtieth:—

“1. A machine for assembling an upper, a counter and a sole, having in combination means for adjusting relatively said upper, counter and sole and means for securing said upper, counter and sole together at the heel.”

“30. A machine of the class described having in combination means for securing together an upper and an inner sole sustained upon a last, and means for securing the upper to the rear end of the last.”

#### ASSEMBLING MACHINE — MODEL E: REX.

As the result of experimental work begun soon after the first machine had been put into commercial use, the assembling machine was reorganized to incorporate many improvements, and the reorganized machine was first put out in August, 1910, being known as “Assembling Machine, Model E, Rex”, and this new machine soon superseded the earlier model. In the reorganized machine

means was provided for insuring that the tack which, as I have explained, was driven through the upper and counter into the rear end of the last to secure the upper materials from displacement relatively to the last, should be accurately located. This improvement was important because it is desirable, first, that this counter tack shall be driven near the rear seam of the upper, while, secondly, the tack must not be driven through that seam, as in almost every instance it would cut the thread and injure the shoe if it were driven through the seam.

The new machine of 1910 was also organized to wipe the upper along the sides of the shoe upon its heel end to points on each side of the shoe adjacent to the forward ends of the counter. This operation aids materially in drawing the upper smoothly around the end of the last and in preventing the forward ends of the counter from becoming misplaced by bending down below the insole and frequently being caught by the insole with a consequent loss of time on the part of an operator who must raise the ends of the counter into proper position before the shoe is lasted.

The reorganized machine of 1910, which is the present commercial machine, is constructed substantially as shown in patent No. 1,026,940, May 21, 1912, Ashton (application originally filed December 26, 1907), and embodies mechanisms defined in all of the thirty claims of that patent, of which claims 2 and 22 are typical:—

“2. A machine of the class described, having in combination, mechanism for inserting a fastening in the rear face of a shoe, and means for determining the position in the width of said face at which the fastening is inserted.”

“22. A machine of the class described, having in combination, means for supporting a last and parts to be assembled arranged loosely upon the last, means for adjusting the upper forwardly along the sides of the last at the heel and for holding the ends of the counter against the sides of the last, and means for thereafter securing the upper to an inner sole mounted upon the last.”

Other mechanisms embodied in the present commercial assembling machine are described in the claims of patent No. 1,000,660, August 15, 1911, Ashton, and No. 1,026,067, May 14, 1912, Ashton (application filed November 30, 1908).

The improvement of the first of these patents, No. 1,000,660, enabled the machine to operate satisfactorily in assembling shoes upon lasts of different lengths. This improvement made the machine universal by rendering it capable of satisfactory use upon all sizes and kinds of lasts. All of the ten claims of this patent No. 1,000,660 define this improvement in its commercial form, and a typical claim is the first :—

"1. A last support, having a supporting member for engaging the cone of a last and means for positioning the last in the direction of its length upon the supporting member, said means being adjustable into two different positions whereby the area of the bearing surface of said member that engages the last at the rear of the positioning means may be varied to suit lasts of different lengths, and means for locking said positioning means in either position of adjustment."

The method which is practiced in operation of the assembling machine is stated in the claims of an allowed application filed October 26, 1907. The patent will be granted on this allowed application on next Tuesday, October 21, 1913. According to the method set forth and claimed in this allowed application, the inner sole is supported on a bottom of a last, the upper and counter are arranged about the last, and the ends of the counter are held inwardly against the sides of the last, so that the forward ends of the counter are prevented from becoming misplaced, and particularly are prevented from being forced down below the plane of the last bottom, which would otherwise usually be caused by the subsequent pressure exerted by the machine on the rear end of the counter so that the operator would have to pull up and properly locate the ends of practically every counter before the lasting operation. In the next step of the method the counter is pressed against the rear face of the last and against the rear edge of the inner sole, so that the parts of the shoe at this point are brought into their proper relation to each other, and the counter and upper are thereafter forced inwardly from the bottom of the last at the rear end and are secured together. Parts of the shoe are now in proper relation to each other and to the last, and the shoe is ready for the pulling over and the subsequent operations. A typical claim of this

allowed application on which, as I stated, the patent will issue on October 21, 1913, is the first :—

" 1. The method of assembling parts of boots and shoes which consists in supporting an inner sole upon the bottom of a making last, arranging an upper and counter about the last in unsecured relation thereto, holding the ends of the counter against the sides of the last, then pressing the counter against the rear face of the last adjacent to its tread face and against the rear edge of the inner sole, pressing the counter against the face of the inner sole and thereafter securing the counter to the inner sole."

This machine is extensively used by shoe manufacturers, over 1800 having been put out since the machine was introduced in September, 1905. The machine is so automatic in its action that a skilled workman is not required for its operation, and most machines are operated by girls. The operation of the machine upon a McKay shoe is illustrated in Defendants' Exhibit 177, which exhibit illustrates the operation of the assembling machine at the rear end of the shoe, and the operation of the pulling-over machine in the forepart of the shoe. A welt shoe which has been operated upon by the assembling machine is shown in Defendants' Exhibit 178. In this exhibit, also, the rear portion of the shoe has been operated upon by the assembling machine, while the forepart illustrates the operation of the pulling-over machine.

The assembling machine is put out by the United Company through its pulling-over department.

#### POUNDING, BLOCKING AND TRIMMING.

In addition to the assembling machine, other auxiliary machines of the pulling-over department which are supplied with the pulling-over machine as a part of the pulling-over system, are:—

" Pounding Machine, Model E, Rex ";

" Pounding and Trimming Machine, Model B, Rex Rotary ";

" Pounding Machine, Model C, Rex Rotary ";

" Pounding and Beating Up Machine, Model A, Rex ".

The general object of these machines is to perform the final operations formerly performed by a hand workman during and as a part of the lasting operation. The projecting bunches of upper

material on the shoe bottom at the heel and at the toe caused by the folding or puckering of the upper during the lasting would interfere with the proper attachment of the outsole, and at the toe end of a welt shoe would also interfere with the proper attachment of the welt, as has been fully explained in my previous testimony in regard to the upper-trimming machine which has been developed and put out by the United Company. On a McKay sewed shoe it is the custom to cut off the excess upper stock at the toe and then to pound the bottom of the shoe at the heel and toe, and sometimes all the way around the bottom of the shoe, to smooth down and level the bottom before attaching the out-sole. On welt shoes it is the practice to pound the bottom of the shoe at the heel end and to trim off the excess material at the toe before the operation of attaching the welt, this trimming operation on welt shoes now being performed by trimming machine, model H, Rex upper, which has been discussed in my previous testimony. All of these pounding and trimming operations, like the operation now performed by the pulling over and assembling machine, were a part of the operations of hand lasting before the introduction of lasting machines, and in February, 1899, the pounding and trimming was done by hand by the lasting machine operator, as a part of the lasting operation.

Prior to 1904 it was the universal practice to trim off the excess upper stock at the toe of a McKay sewed shoe by cutting it off with a hand knife, and it was also the general practice to beat down the folded or puckered upper stock at the heel, and that remaining at the toe after the trimming operation, by pounding the stock at the heel and toe with a hammer. It was also customary for the workman to hammer more gently, and to rub with the hammer, the upper stock around the heel and toe adjacent to the bottom of the last, for the purpose of shaping the upper stock, including the box toe at the toe, and the stiff counter at the heel, to define more sharply the angle of union adjacent to the edge of the last, and particularly at the heel where it is desired to force the counter as closely as possible to the last. The operation on

the bottom of the shoe was known as "pounding", and the operation on the side of the shoe was known as "blocking".

#### POUNDING MACHINE: REX POUNDING MACHINE — MODEL E: REX.

In 1904, the United Company first put out for commercial use a machine then named "Pounding Machine, Rex", which was constructed substantially as shown in the drawings, described in the specifications and set forth in the claims of patent No. 1,019,067, March 5, 1912, McFeely (application filed August 15, 1904). This machine was organized with a hammer arranged to strike an oblique inward blow on the shoe bottom and to move inwardly over the stock, and with a blocking tool to engage the upper close to the bottom of the last adjacent to the point where the blow of the hammer was struck, and operating simultaneously with the hammer. Typical claims of this patent No. 1,019,067 are the following:—

"1. A machine of the class described, having in combination, devices constructed and arranged to engage the upper on the bottom and side of a shoe substantially to its edge, and automatic actuating means for causing said devices to form the upper against the inner sole and side of the last and to shape the edge of the shoe."

"3. A machine of the class described having, in combination, devices for engaging contiguous portions of upper material on the bottom and side of a shoe, and automatic actuating means for causing said devices to force said portions respectively downwardly and inwardly with relation to the last for shaping the edge of the shoe."

The machine described and shown in the claims above quoted, and more specifically in many other claims of that patent, successfully solved the problem of substituting automatic mechanical means for the inclined drawing blow of the hammer in the operator's hand, and it improved upon the hand operation because it treated both the bottom and sides of the shoe simultaneously at the same point, while the hand workman had to treat them at different times. Prior to 1904 there was no machine in the industry for pounding the bottoms and blocking the sides of shoes, either welt or McKay sewed.

The United Company owns a number of patents which describe

in their claims the mechanisms of this machine in broader terms than those above quoted. These patents, and typical claims of each, are as follows: No. 731,168, June 16, 1903, Eaton :—

“ 1. A heel seat and counter-beating machine, having in combination, a suitable jack for supporting a lasted shoe, a hammer for beating the heel seat of such shoe, a hammer for beating the counter thereof, and connected mechanism for operating the hammers, substantially as described.”

No. 893,440, July 14, 1908, Carter (application filed April 3, 1899) :—

“ 30. In a machine of the class described, a pounder movable to force the upper inwardly from the edge of the inner sole and downwardly toward the inner sole, a carrier for the pounder, means for actuating the carrier and pounder together to effect one of said movements of the upper, and means for actuating the pounder relatively to the carrier to effect the other movement of the upper.”

No. 910,251, January 19, 1909, Wheeler (application filed August 2, 1901) :—

“ 54. In a machine of the class described, the combination with a pounder, of means for positioning the shoe, and means for actuating the pounder upwardly away from the shoe and then toward the shoe in a path inclined downwardly and inwardly with relation to the shoe bottom, the machine having provision for effecting a yielding engagement of the pounder with the shoe.”

No. 1,018,526, February 27, 1912, Snow (application filed July 9, 1904) :—

“ 31. In a machine of the class described, the combination with pounding-up means, of mechanism for actuating said pounding-up means into and out of engagement with the work, and other means for moving said pounding-up means forwardly over the work.”

Reissued patent No. 12,825, July 7, 1908, Kron (original patent No. 733,974, July 21, 1903) :—

“ 9. In a machine for beating the upper on the bottom of a shoe, the combination, with a beating device, of means for actuating said beating device downwardly toward the shoe bottom and inwardly away from the edge of the shoe bottom, and then upwardly away from the shoe in a different path.”

When this machine was used on shoes having sharply inclined

shanks it was found that the blocking tool, which was properly shaped for the heel and toe, but was not shaped to fit such shanks, was liable to injure the upper in the shank. Accordingly, in 1906, there was adopted in the machine an improvement which was aimed to overcome this difficulty and which enabled the operator to render the blocking tool inoperative upon the shank. This improvement is defined in the seventh claim of patent No. 1,048,788, December 31, 1912, Ashton (application filed June 16, 1908), as follows :—

“ 7. In a machine of the class described, the combination with means for pounding a shoe and means for blocking the shoe, of means for rendering one of said means inoperative while the other means continues in operation.”

Other mechanisms set forth in the claims of this patent No. 1,048,788 were used for a time and were then superseded in 1907 by improvements set forth in the claims of patent No. 1,030,751, June 25, 1912, Shattuck (original application filed December 17, 1906). The nature of this improvement is well set forth in the tenth claim of that patent :—

“ 10. In a machine of the class described, the combination with pounding up means and means for actuating it to force the upper on the bottom of a shoe downwardly and inwardly away from the edge of the shoe, of rollers arranged on either side of the pounding up means to engage the upper on the side of the shoe, and means for actuating the rollers to rub the upper adjacent to the edge of the shoe.”

In 1906 this pounding machine was named officially “ Pounding Machine, Model E, Rex ”, and from the time of its adoption in 1904 until the adoption of pounding and trimming machine, Rex rotary, in July, 1908, 650 of the Rex pounding machines had been put out. One of these machines will take care of the output of from six to eight lasting machines of any type in commercial use.

#### TRIMMING MACHINE : REX TOE.

In the first part of this answer it was stated that before the operation of the pounding machine on the toe of a McKay shoe it was desirable to remove the surplus stock left at the toe at the end of

the lasting operation. Prior to 1904 the operation of trimming off the surplus stock at the toe had always been performed by hand. In the latter part of 1904 the United Company offered to manufacturers the first commercial machine for performing this operation, which was known as "Trimming Machine, Rex Toe". The general problems which had to be met in the production of a machine for performing this operation were, first, to present the shoe for the operation of cutting in such manner that only the proper amount of excess stock would be removed; and, secondly, to provide an organization for the machine which would enable it to remove the excess stock satisfactorily without undoing the work of the lasting machine. The second problem was met, and substantial progress was made toward the solution of the first problem, by the organization of this Rex toe-trimming machine as it was first put out. It was then constructed as shown in the drawings of patent No. 891,130, June 16, 1908 (application filed June 26, 1905), and as set forth in all of the twenty-two claims of that patent, of which typical claims are the following:—

"6. In a toe trimming machine, the combination with a cutter, of a gage having an acting portion shaped to receive the toe part of a shoe and to permit projections on said toe part to extend outwardly from the plane of said acting portion and arranged to maintain the shoe normally out of the path of the cutter and to move with the shoe to permit said projections to be brought within the path of the cutter."

"21. In a toe trimming machine, the combination with means for positioning the toe part of a shoe, of means for trimming projecting portions of the upper from said toe part by the separation from the shoe of successive layers of stock progressively from the toe tip toward the heel."

In the use of the machine constructed as shown in the drawings of patent No. 891,130 it was found that this organization was not readily adaptable for operation upon toes of varying widths. Accordingly, in September, 1906, the machine was improved by embodying in its organization the mechanism shown in the drawings and described in the eight claims of patent No. 891,131, June 16, 1908, Ashton. The most important of the improvements defined in the claims of this patent was means automatically adjust-

able by the shoe to present toes of different widths in the same manner for the operation of the cutter. A typical claim is the seventh :—

"7. A machine for reducing projecting portions of an upper upon the bottom of a shoe at the toe, having in combination a tool for separating from the shoe the surplus material to be removed, a gage formed to engage the bottom of the shoe at the toe and to project inwardly over the edge of the shoe, and arranged to present the projecting portions of the upper to the tool and constructed for adjustment in width to receive shoes varying in size, and means for adjusting said gage actuated by the movement of the shoe into operative relation to the gage."

This trimming machine, Rex toe, had a capacity which enabled it to trim the toes of shoes which had been lasted on from eight to twelve lasting machines of any type which was in commercial use. Four hundred and forty-two of the machines had been put out prior to July, 1908, when, as will be later explained, the machine was combined with a new type of pounding machine.

#### POUNDING AND TRIMMING MACHINE: REX ROTARY.

#### POUNDING AND TRIMMING MACHINE—MODEL B: REX ROTARY.

The pounding machine which had been discussed in the earlier part of this answer and which was known as "Pounding Machine, Model E, Rex", was the standard pounding machine for both McKay sewed and welt work for some four years. In July, 1908, it was superseded, for McKay sewed shoes, by a machine known as "Pounding and Trimming Machine, Rex Rotary", and later, as I shall explain, it was also superseded for welt work.

This first pounding machine, now known as "Pounding Machine, Model E, Rex", which, as I have explained, was the first machine for performing the pounding operations formerly done by hand, and which performed these operations effectively, required a "jack" or work support, because the operation of the pounding mechanism of that machine was strictly a mechanical operation and the blows were too hard to be resisted by the hands of the operator alone. In view of the desirability of a machine which would not require a work support, and in the operation of which no time

would be lost in jacking the shoe, experimental work was undertaken by the United Company with a view to producing a machine of radically different organization which would do as good work as the original Rex pounding machine and which would not require a work support.

After some two years of experimental work, including the usual trying out of experimental machines in different shoe factories, there was adopted for commercial use and offered to manufacturers in July, 1908, a machine known as "Pounding and Trimming Machine, Rex Rotary". The machine as first put out was constructed substantially as shown in the drawings and described in the claims of patent No. 1,030,837, June 25, 1912, Ashton (application filed December 12, 1907), and the first machine embodied mechanism defined in substantially all of the forty-one claims of that patent, which also define the organization of the present commercial machine. Of the claims of this patent, the fourth and twenty-ninth indicate the characteristic construction and mode of operation of the machine. These claims are as follows:—

"4. In a machine of the class described, a rotary shoe beater comprising a carrier and beating members arranged about the periphery of the carrier, each member consisting of a plurality of rings mounted for swinging movement about their connection with the carrier."

"29. In a machine of the class described, a rotary shoe beater comprising a carrier and an annular series of beating members movable bodily outwardly with relation to the carrier from an inoperative position to an operative position by centrifugal force when the beater is rotated."

The blocking of a shoe, that is, the light hammering and rubbing of the sides of the upper adjacent to the insole was provided for in this machine by the organization shown in the drawings of patent No. 1,019,878, March 12, 1912 (application filed November 19, 1908). Of the ten claims of this patent defining the blocking mechanism of this machine, the first is typical:—

"1. A machine of the class described, having in combination, means for treating the bottom of a shoe, means for resting the side of the shoe during the bottom treating operation, and actuating mechanism for said two means, said resting means being constructed

and arranged to be operatively connected with its actuating means to beat the side of the shoe at the will of the workman without interrupting the operation of the machine in beating a shoe."

The principle of operation of this side beating or blocking mechanism of this machine is broadly set forth in claim 3 of patent No. 768,560, August 23, 1904, Casgrain, which is as follows:—

"3. In a machine of the class described, a leather working tool, and means for imparting to said tool a succession of rapid blows when said tool is in contact with the stock, said means being arranged and constructed to cease actuating the tool when the tool is out of contact with the stock."

The organization of this machine, including combined pounding and blocking tools, is set forth in broad terms in the claims of patent No. 1,019,067, March 5, 1912, McFeely (application filed August 15, 1904), typical claims of which patent have previously been quoted in the earlier part of this answer in the discussion of "Pounding Machine, Model E, Rex".

For the convenience of the operator the toe-trimming machine, known as "Trimming Machine, Rex Toe", which also has been discussed in an earlier part of this answer, was combined with the pounding and blocking organization of this machine so that the pounding operations of trimming the toe and pounding the shoe bottom could be performed by the operator while standing before one machine. Accordingly, this machine, "Pounding and Trimming Machine, Rex Rotary", included the organization of the Rex toe-trimming machine which has already been discussed, and which, as I have stated, is set forth in the claims of patent No. 891,130, June 16, 1908, Ashton, and patent No. 891,131, June 16, 1908, Ashton.

In December, 1901, the bottom-pounding organization of this machine was improved by incorporating the mechanism illustrated in the drawings and set forth in all of the nine claims of patent No. 1,003,434, September 19, 1911, Covell. In March, 1910, a radically new toe-trimming mechanism was adopted for this machine, which is shown in the drawings and described in nearly all of the twenty-six claims of patent No. 1,054,656, February 25, 1913,

McFeely (application filed April 18, 1910). A typical claim of this patent is the fifth:—

"5. A machine for removing surplus stock from boots or shoes or parts thereof, comprising a hollow abrading tool having perforations adapted to permit passage to the interior of the tool of waste particles taken from the stock by the abrading surface, a shoe support to present the toe portion of the shoe for the operation of said tool, and means for drawing a current of air through the interior of said tool."

After the adoption of the new toe-trimming mechanism of this patent No. 1,054,656, this was offered to shoe manufacturers alternatively with the toe-trimming mechanism of the Ashton patents Nos. 891,130 and 891,131, previously discussed.

This pounding and trimming machine, Rex rotary, became, immediately after its introduction, the standard pounding and trimming machine for McKay sewed shoes. It had the advantage over the original pounding machine, pounding machine, model E, Rex, that it did not require jacking of the shoe, since it was organized to strike about 28,000 light blows per minute instead of 800 to 1200 heavy blows per minute struck by the old machine, and it had the further advantage for manufacturers of McKay shoes that it performed the two operations of trimming the toe and pounding the bottom of the shoe and saved the floor space which formerly had been required for two machines to perform those two operations separately. This new machine also added to the operative's convenience by enabling him to perform these two operations, that is, trimming of the toes and pounding and blocking of the bottom and sides, while standing before the same machine. Accordingly, manufacturers of McKay sewed shoes generally preferred this new machine of which 931 had been put out after its adoption in 1908 up to September 1, 1913. One of these rotary pounding and trimming machines will easily trim the toes, pound the bottoms and block the sides of all the shoes lasted upon two hand-method lasting machines.

To illustrate the operation of this machine I produce a McKay shoe which has been lasted, but has not yet been operated upon. The necessity of trimming the toe and then pounding the toe, and

of pounding the bottom of the heel end of the shoe before attaching the out-sole will be obvious.

[*Lasted McKay shoe before trimming and pounding operations is introduced in evidence, and marked "Defendants' Exhibit 180".*]

[*Answer to Int. 103 continued:*]

I also produce a lasted McKay shoe which has been operated upon by the Rex rotary pounding and trimming machine and which has had the excess material removed from the toe by the trimming operation of that machine, and has been pounded all around the bottom of the shoe and has had its sides blocked by that machine. The improvement effected by the operation of the machine will be obvious upon comparing this shoe with that of Defendants' Exhibit 180.

[*Lasted McKay shoe which has been operated upon by Rex rotary pounding and trimming machine is introduced in evidence, and marked "Defendants' Exhibit 181".*]

#### POUNDING MACHINE—MODEL C: REX ROTARY.

[*Answer to Int. 103 continued:*]

This rex rotary pounding and trimming machine was not, however, adapted for welt work, because in welt work the lasting tacks adjacent to the heel, as well as along the shank and forepart, must be left with their head ends projecting from the stock to facilitate pulling them, as is illustrated in Defendants' Exhibit 149. There was no way in which this machine could be used on welt shoes without danger either of ripping out these tacks or of tearing up the lasted upper from the insole. Accordingly, the original pounding machine, model E, Rex, introduced in 1904, as has been explained, was continued as the standard machine for pounding heel seats of welt shoes, until the introduction in March, 1912, of "Pounding Machine, Model C, Rex Rotary".

This machine was a reorganization of pounding and trimming machine, Rex rotary (now designated as "Model B"), to adapt that machine for welt work. The mechanisms set forth in the claims of all the patents which I have previously discussed in this answer in connection with pounding and trimming machine, Rex

rotary, are embodied in this new model C machine for welt work, except the mechanisms described in the claims of the three patents —

No. 891,130 ;

No. 891,131, and

No. 1,054,656,

which relate to the toe-trimming mechanisms of the model B rotary pounding and trimming machine which were adapted for use upon McKay shoes only.

In addition to the patents, mechanisms of which are common both to the model B machine and the model C machine, the model C machine embodies mechanisms adapting it particularly for welt work, which are defined in six claims of patent No. 1,010,550, December 5, 1911, Wentworth; three claims of patent No. 1,030,-751, June 25, 1912, Shattuck (original application filed December 17, 1906); and all ten claims of patent No. 1,032,356, July 9, 1912, Ashton (application filed September 11, 1911).

Referring to typical claims of these patents, claim 3 of patent No. 1,010,550 is as follows : —

"3. A machine for shrinking and ironing the upper of a lasted shoe, having, in combination, a heated ironing roll shaped to treat different portions of the upper of the shoe, means for applying viscous material to the heated roll, and means for driving the roll to rub and heat the upper and automatically to distribute the viscous material over the surface of the upper engaged by the roll to prevent injury to the leather by the heated roll."

The third claim of patent No. 1,030,751 is as follows : —

"3. In a machine of the class described, the combination with a stationary support, a roller mounted thereon and formed and arranged to engage the side of a shoe adjacent to its edge, of means for actuating the roller to remove wrinkles or surface inequalities from the upper at and adjacent to the edge of the shoe."

Among the claims of patent No. 1,032,356 which set forth the purpose of the mechanism illustrated in the drawings of that patent and embodied in this model B machine are the following : —

"1. In a machine of the class described, a beater, a horizontal

work resting member, and an adjacent vertical abutment between the horizontal member and the beater, arranged to serve as a guard to prevent the beater from engaging and forcing toward the edge of the last bottom the upper on the lower side of the heel seat while the beater is forcing inwardly the upper on the upper side of the heel seat."

"5. In a machine of the class described, a beater, a rest for engagement with one side of the heel portion of the shoe while the heel seat at the other side is being beaten, and vertical stops at each lateral side of said rest in position to engage the rear partially driven side lasting tacks of a lasted shoe and guide the operator in so presenting the shoe to the beater that the portions of the upper, held by the side lasting tacks, will be prevented from engagement with the beater."

This machine, pounding machine, Rex rotary, model C, is now the standard commercial machine for pounding heel seats of welt shoes, which is the class of work for which the machine was especially designed and to which its field is limited.

I produce a welt shoe which has been operated upon at its heel end by this machine, which also illustrates at its toe end the operation of trimming machine, model H, Rex, which has been discussed in my previous testimony.

[*Welt shoe operated upon by pounding machine, Rex rotary, model C, and by trimming machine, model H, Rex upper, is introduced in evidence, and marked "Defendants' Exhibit 182".*]

#### POUNDING AND BEATING UP MACHINE — MODEL A: REX ROTARY.

[*Ans. to Int. 103 continued:*]

In March, 1912, there was first supplied for commercial use a machine for pounding and beating up the soles of turn shoes, which, while a development of pounding and trimming machine, Rex rotary, model B, is a reorganization of that machine particularly adapting the new machine for turn work. This machine is officially known as "Pounding and Beating Up Machine, Model A". The mechanism which particularly adapts this machine for turn work is not shown or described in any patents which have as yet been granted, but it is anticipated that patent protection will eventually be obtained for these improvements. The machine em-

bodies mechanisms set forth in the claims of the following patents:—

- No. 764,569, July 12, 1904, Erickson.
- No. 768,560, August 23, 1904, Casgrain.
- No. 1,003,434, September 19, 1911, Covell.
- No. 1,010,550, December 5, 1911, Wentworth.
- No. 1,019,067, March 5, 1912, McFeely (application filed August 15, 1904).

No. 1,030,751, June 25, 1912, Shattuck (application filed December 17, 1906).

No. 1,030,837, June 25, 1912, Ashton (application filed December 12, 1907).

To illustrate the operation of this pounding and beating-up machine, model A, I produce a turn shoe having its sole attached, which has not been operated upon by this machine.

[*Turn shoe before operation of pounding and beating machine, model A, is introduced in evidence, and marked "Defendants' Exhibit 183".*]

[*Answer to Int. 103 continued:*]

The shoe which is Defendants' Exhibit 183 is a right shoe; I now produce a left shoe of that pair which has been operated upon by pounding and beating-up machine, model A.

[*Turn shoe after operation of pounding and beating-up machine, model A, is introduced in evidence, and marked "Defendants' Exhibit 184".*]

[*Ans. to Int. 103 continued:*]

The demand for this model A machine is limited. It was especially designed and built to supply a demand for such a machine from manufacturers in the Philadelphia territory.

All of the machines which have been discussed in the foregoing answer are put out by the United Company through its pulling-over department.

Mr. WEBSTER. The petitioner respectfully calls the attention of the court to the fact that the foregoing answer is largely in the nature of argument; that it contains reference to what others thought, said and did, and statements in reference to alleged

mechanisms and machines of applications for patents now pending, and reference to mechanisms of patents issued after the filing of the petition herein; that it contains statements as to what is contemplated, what alleged experiments and experimental machines have been made, and expenses involved in experiments; and also contains statements as to the opinion of the witness. And all statements of the witness in reference to said matters are objected to as inadmissible, incompetent and immaterial, as having no bearing on the questions at issue herein, and as in no sense in reply to, or in defence of, any evidence or matters offered by the petitioner; and counsel for petitioner reserves the right to, after the record shall have been transcribed by the stenographer, call attention specifically to the matters objected to and to move that the same be stricken from the record.

*Int. 104.* Have you collected under one or more covers the patents referred to by you in your last answer; if so, will you please produce them, and as you produce them state briefly to which of the machines referred to by you the patents contained in the several volumes relate?

*Ans.* I produce, first, a volume of patents mentioned in the portion of my testimony relating to the several models of the pulling-over machine.

[*Volume of patents relating to pulling-over machine is introduced in evidence, and marked "Defendants' Exhibit 185".*]

[*Answer to Int. 104 continued:*]

I also produce a volume comprising copies of patents which are mentioned in the portion of my testimony relating to assembling machines.

[*Volume of patents relating to assembling machines is introduced in evidence, and marked "Defendants' Exhibit 186".*]

[*Answer to Int. 104 continued:*]

I also produce a volume of copies of patents mentioned in the portion of my preceding answer relating to pounding machines and toe-trimming machines.

[*Volume of patents relating to pounding machines and toe-trim-*

*ming machines is offered in evidence, and marked "Defendants' Exhibit 187".]*

Mr. WEBSTER. The petitioner objects to the introduction of patents issued after the date of the filing of the petition herein.

*Int.* 105. Please give the number, date and name of patentee of the several patents referred to in the volumes of patents which have just been offered in evidence as Defendants' Exhibits 185, 186 and 187.

*Ans.* DEFENDANTS' EXHIBIT 185.

No. 584,192, June 8, 1897, Preston.  
No. 597,321, January 11, 1898, Ladd.  
No. 663,777, December 11, 1900, McFeely.  
No. 791,986, June 6, 1905, McFeely.  
No. 893,331, July 14, 1908, Ladd.  
No. 910,251, January 19, 1909, Wheeler.  
No. 950,701, March 1, 1910, McFeely.  
No. 959,874, May 31, 1910, McFeely.  
No. 988,582, April 4, 1911, McFeely.  
No. 999,327, August 1, 1911, McFeely.  
No. 1,001,701, August 29, 1911, Spencer.  
No. 1,002,421, September 5, 1911, McFeely.  
No. 1,002,422, September 5, 1911, McFeely.  
No. 1,007,766, November 7, 1911, Ashton.  
No. 1,029,387, June 11, 1912, McFeely (application filed March 28, 1903).

No. 1,030,264, June 18, 1912, McFeely (application filed January 26, 1910).

No. 1,030,522, June 25, 1912, McFeely (application filed March 28, 1903).

No. 1,030,838, June 25, 1912, Ashton (application filed August 2, 1907).

No. 1,055,016, March 4, 1913, Brothers (application filed September 23, 1908).

DEFENDANTS' EXHIBIT 186.

No. 893,696, July 21, 1908, Ashton.  
No. 1,000,660, August 15, 1911, Ashton.

No. 1,023,794, April 23, 1912, Ashton (application filed August 15, 1906).

No. 1,026,940, May 21, 1912, Ashton (application filed December 26, 1907).

No. 1,026,067, May 14, 1912, Ashton (application filed November 30, 1906).

DEFENDANTS' EXHIBIT 187.

No. 731,168, June 16, 1903, Eaton.

No. 733,974, July 21, 1903, Kron.

Reissue No. 12,825, July 7, 1908, Kron (original patent No. 733,974).

No. 764,569, July 12, 1904, Erickson.

No. 768,560, August 23, 1904, Casgrain.

No. 891,130, June 16, 1908, Ashton.

No. 891,131, June 16, 1908, Ashton.

No. 893,440, July 14, 1908, Carter.

No. 910,251, January 19, 1909, Wheeler.

No. 1,003,434, September 19, 1911, Covell.

No. 1,010,550, December 5, 1911, Wentworth.

No. 1,018,526, February 27, 1912, Snow (application filed July 9, 1904).

No. 1,019,067, March 5, 1912, McFeely (application filed August 15, 1904).

No. 1,019,878, March 12, 1912, Ashton (application filed November 19, 1908).

No. 1,030,751, June 25, 1912, Shattuck (application filed December 17, 1906).

No. 1,030,837, June 25, 1912, Ashton (application filed December 12, 1907).

No. 1,032,356, July 9, 1912, Ashton (application filed September 11, 1911).

No. 1,048,788, December 31, 1912, Ashton (application filed June 16, 1906).

No. 1,054,656, February 25, 1913, McFeely (application filed April 18, 1910).

[*Adjourned to Tuesday, October 21, 1913, 10 a. m.*]

BOSTON, MASS., October 21, 1913.

*Int.* 106. In answer to a previous question propounded to you by counsel for petitioner you referred to the following sole-leveling machines :—

“Leveling Machine, Goodyear Welt and Turn (Turn Work)”;  
“Leveling Machine, Hercules”;  
“Leveling Machine, Atlas”.

Please state the field in the leveling machine art occupied by each of these machines, and if these machines as put out by the United Shoe Machinery Company embody improvements which are the subjects-matter of Letters Patent of the United Company, refer to such improvements and state the patents.

**LEVELING MACHINES: TURN, ROLLING PRESSURE AND DIRECT PRESSURE.**

*Ans.* In my previous testimony relating to leveling machine, Goodyear automatic sole, I have explained that the purpose of the leveling operation is to impart to the bottom of the sole the shape which is desired in the finished sole, and that this desired shape is imparted by means of pressure after the sole has been attached to the shoe. The Goodyear automatic leveling machine is especially designed and adapted for leveling soles of welt shoes, and it is used exclusively on welt shoes. Because it exerts too heavy a pressure for turn shoes, and also because it is not organized to impart pressure of the particular kind, and in the particular manner required for turn shoes, as I shall later explain, it is never used for leveling turn shoes, and the United Company puts out for leveling turn shoes a machine especially designed for that work and adapted for its peculiar conditions, which is known as “Leveling Machine, Goodyear Welt and Turn (Turn Work)”.

The other two machines referred to in the question are the two which the United Company puts out for leveling shoes other than welt and turn shoes.

Leveling machine, Hercules, is of the rolling-pressure type and is adapted and put out for leveling heavy shoes, such as men's McKay

sewed shoes and shoes having their soles attached by screws, nails or pegs.

The other machine, leveling machine, Atlas, is of the direct pressure type and is adapted and used for leveling lighter weight McKay sewed shoes, and practically all women's, misses' and children's McKay sewed shoes have their soles leveled on the Atlas leveling machine.

#### LEVELING MACHINE : GOODYEAR WELT AND TURN (TURN WORK).

Referring now the machine which the United Company puts out for leveling turn shoes, "Leveling Machine, Goodyear Welt and Turn (Turn Work)", which was first put out in June, 1906, the organization of that machine is shown in patent No. 1,004,155, September 26, 1911, Eppler (application filed May 3, 1906), with the improvements shown and described in patent No. 996,707, July 4, 1911, Eppler; No. 916,021, March 23, 1909, Rigby; and No. 925,509, June 22, 1909, Rigby.

A characteristic feature of this machine is the leveling roll, which is especially designed to meet conditions peculiar to the leveling of turn shoes. As explained in my previous testimony, a turn shoe is a light weight shoe having but one sole, and while on the one hand the turn sole will not stand as much pressure as the welt sole and the action of the leveling tool must not be so hard as to injure the sole, unsupported as it is by an insole, on the other hand it is essential that sufficient force be exerted upon the sole, and in such manner, and on such portions, as effectively to beat down the seam which secures the sole to the upper, and to remove the wrinkles in the shank of the sole formed during the operation of turning the shoe right side out, which operation follows the operation of attaching the sole to the upper when the shoe is wrong side out. To meet these conditions this turn leveling machine comprises a leveling roll, which, unlike the smooth roll of the Goodyear automatic leveling machine, is formed with hammering and rubbing ribs, and also, unlike the roll of the automatic machine, the roll on the turn machine is positively driven, both of which characteristics contribute to its effective operation on turn

shoes. A ribbed roll is broadly described in the claims of patent No. 563,487, July 7, 1896, Howe, of which claim 1 is as follows:—

“1. In a beating-out machine, the combination with a rotary shaft of a beating-out roll provided with a series of fixed, rigid, longitudinal projections, separated sufficiently from each other to strike the sole, in the rotation of the roll, with distinct blows to work the leather of the insole as desired, substantially as described.”

Ribbed rolls substantially like the rolls shown in the Howe patent were tried out by the United Company, but while the use of these rolls demonstrated the utility of ribs for beating down the seam, it was found that the roll needed improvements, first, because the action of the ribs was not uniform, and also because, owing to the shape of the ribs, as shown in Fig. 2 of the Howe patent, they struck too hard a blow and did not do enough rubbing. The roll of this Howe patent was improved upon in the first commercial machine put out for turn work in June, 1906, by the substitution of the roll shown and described in patent No. 1,004,155, September 26, 1911, Eppler, which shows the roll as provided with a series of rubbing and pounding projections or ribs, which are separated by slots of the same width throughout the length of the roll, and these ribs were constructed to do more rubbing and less hammering than the ribs of the roll of the Howe patent. This construction, which rendered the pounding action of the roll the same on all portions of the sole acted upon, is defined in several claims of that patent, of which claim 1 is typical:—

“1. A sole leveling roll, concave longitudinally, and provided with a series of slots of the same width throughout their length, dividing the roll into a series of sole rubbing and pounding projections or ribs, adapted to pound the sole in a substantially uniform manner throughout the length of the roll.”

The general organization of the commercial machine as first put out and as now, with improvements, supplied to manufacturers, is defined in the claims of this patent No. 1,004,155, all of the fourteen claims of which define mechanisms embodied in the machine as it has been put out since its adoption and as it is now being put out.

The roll of the Eppler patent was, in turn, improved upon as

shown in the drawings and set forth in the claims of patent No. 916,021, March 23, 1909, Rigby. In the improved construction of this Rigby patent the middle portion of the roll was left smooth, so that the desired pounding effect could be secured along the edges of the sole over the seam without pounding the middle portion of the sole, where pounding was not needed, and where, in fact, it was undesirable, since it frequently stretched the sole lengthwise. The construction shown in this Rigby patent No. 916,021 is that now used on the commercial machine, and is defined in the five claims of this Rigby patent, of which claims 1 and 2 are typical:—

“1. A sole leveling roll provided at its centre with a smooth sole rubbing surface, and at its ends with a series of sole beating projections.

“2. A sole leveling roll provided at its centre with a smooth sole rubbing surface and at its ends with a series of sole beating projections arranged obliquely to the axis of the roll and adapted to exert an outward wiping action on the sole of a shoe.”

The mechanism embodied in this machine whereby, when the roll is adjusted for different heights of lasts, the pressure mechanism is simultaneously adjusted so that substantially the same pressure will be exerted upon the sole, whatever the height of the last, is defined in all of the eight claims of patent No. 925,509, June 22, 1909, Rigby. A typical claim is the first:—

“1. A sole leveling machine, having, in combination, a shoe supporting jack and a sole leveling tool relatively movable both vertically and longitudinally, pressure mechanism for forcing one of said parts toward the other to exert pressure on the sole of the shoe, a stop to determine the proper relative vertical position of said parts when the leveling tool is disengaged from the shoe, means for adjusting said stop to position the parts properly for different shoes, and means acting simultaneously to adjust the pressure mechanism to cause it to exert substantially the same pressure on the different shoes.”

In addition to the mechanisms defined in the claims of the patents already discussed, this turn leveling machine embodies improvements set forth in all of the four claims of patent No. 996,-707, July 4, 1911, Eppler, and also embodies improvements on

which patents have not yet been granted, but for which it is anticipated that patent protection will ultimately be obtained.

This machine is put out by the United Shoe Machinery Company through its Goodyear department. Over two hundred of the machines have been put out since it was first introduced in 1906 up to March 1, 1913, the end of the United Company's last fiscal year. The field for the machine is somewhat limited, as only about thirteen per cent of the shoes made in this country are turn shoes.

#### LEVELING MACHINES FOR SHOES OTHER THAN WELT AND TURN SHOES.

Referring now to the machines which the United Company puts out for leveling shoes other than welt or turn shoes, it should first be explained that the leveling of McKay sewed or nailed shoes presents different problems from those which have to be dealt with in the leveling of welt or turn shoes. In the first place, when a welt or turn shoe is leveled it is still upon a wooden last, while the last has to be removed from a McKay sewed, or a nailed shoe, immediately after the lasting operation because the last cannot be in the shoe during the attaching of the sole by means of the McKay sewing machine, or a metallic fastening or pegging machine. Accordingly, during the leveling operation a McKay sewed, or a nailed, shoe has to be mounted upon an iron last or form which is a part of the leveling machine, and which, to facilitate the application and removal of the shoe, must fit the shoe somewhat loosely. Co-operating with that iron last or form, a sole pressing form must be used which is shaped to correspond with the contour which it is desired to impart to the sole by the leveling operation. It is not practicable, in leveling McKay sewed, or nailed shoes, to use a roll operating upon different portions of the sole successively, because, as has been explained, the iron last or form must fit the shoe more loosely than a wooden last and a roll operating first on one side of the sole and then on the other would displace the shoe on its loosely fitting form and would distort the sole. Accordingly, it is the universal practice to use leveling forms shaped to impart the desired shape to the sole, and machines of two types are used for

leveling soles of McKay sewed and nailed shoes, in both of which types the pressure is applied in a direction substantially perpendicular to the sole.

In one of these types, known as "rolling pressure type", the pressure is applied by oscillating the iron last or form which supports the shoe and a co-operating curved leveling form so that the pressure is applied progressively from the heel to the toe, and back from the toe to the heel, in lines extending clear across the sole. Leveling machine, Hercules, is of this type.

In the other type, known as "direct pressure type", the leveling pressure is applied to the sole by a form shaped to impart the desired contour and arranged for right line pressing movement relatively to the shoe so that the leveling pressure is exerted upon the entire face of the sole simultaneously. Of this type is leveling machine, Atlas.

#### LEVELING MACHINE — MODEL A : HERCULES.

The Hercules leveling machine, which is of the first type of the two types of leveling machines which I have just explained in general terms, is provided with two iron shoe-supporting forms or jacks and with two co-operating curved pressing forms which constitute two pairs of leveling mechanisms arranged to be operated alternately, and in each pair the jack and sole engaging form are given oscillatory movements so that they roll on each other and apply pressure to different narrow portions of the sole progressively from heel to toe, and back from toe to heel.

The Hercules leveling machine as now being put out commercially by the United Company embodies mechanism set forth in the claims of the following patents:—

No. 861,746, July 30, 1907, Mayo.

No. 884,144, April 7, 1908, Frasier.

No. 932,220, August 24, 1909, Winkley.

No. 944,620, December 28, 1909, Holt.

No. 982,267, January 24, 1911, Gouldbourn.

No. 997,798, July 11, 1911, Frasier.

The Frasier patent No. 884,144 represents the first stage in the

commercial development of this machine. Two characteristics of the commercial machine are set forth in the claims of this patent. The first is the organization of the machine by which the operator can control the number of oscillations of the form and thus determine the amount of the leveling action effected by the machine. This was new in machines of this type. The other feature is the organization by which the two pairs of jacks are thrown into operation alternately. In earlier machines of this type it had been necessary for the operator to actuate independently the mechanism for operating the jack and form constituting each pair of pressure-applying mechanisms. These important features of the Hercules leveling machine are defined in the first and sixth claims of the Frasier patent No. 884,144:—

“1. A sole pressing machine, having, in combination, a shoe supporting jack, a co-operating sole pressing form, mechanism acting continuously to move the jack and form to subject the sole of a shoe supported upon the jack to a plurality of rolling pressures and means controlled by the operator acting whenever it is put into operation to stop the jack and form with the jack in a position of presentation, substantially as described.”

“6. A sole pressing machine, having, in combination, two shoe supporting jacks, two co-operating sole pressing forms, means for actuating each jack and form to subject the sole of a shoe supported upon the jack to a rolling pressure, and means for causing the jacks and their co-operating forms to be thrown into operation alternately, substantially as described.”

The machine of this Frasier patent No. 884,144 was only an experimental machine, and but one machine was built. This experimental machine was entirely reorganized and the improvements incorporated in the machine by this reorganization as shown in patent No. 861,746, July 30, 1907, Mayo, which shows the commercial form of the machine as it was first put out in April, 1903. Among the more important improvements set forth in the claims of this patent was means for counteracting the tendency of a machine of this type to work the sole forwardly during the leveling operation, a disadvantage which had limited the field of usefulness of machines of this type. Among the sixteen claims of this patent, all defining mechanisms embodied in the commercial machine

as first put out, and as it is being supplied to manufacturers today, a more notable claim is the third:—

“3. A sole pressing machine, having, in combination, a shoe supporting last, a sole pressing form, a last carrier, a form carrier, and mechanism for actuating said carriers to subject the sole of a shoe supported upon the last to a rolling pressure acting to draw the form over the sole while in contact therewith, substantially as described.”

An important feature of the organization of the Hercules machine is defined in claim 5 of patent No. 932,220, August 24, 1909, Winkley, as follows:—

“5. A sole pressing machine, having, in combination, a plurality of shoe supporting jacks, a plurality of co-operative sole pressing forms, mechanism common to all the jacks and forms for actuating any jack and its co-operating form when connected therewith to subject the sole of a shoe supported upon the jack to a rolling pressure, and means for connecting each jack and its co-operating form to said mechanism and for disconnecting them therefrom whereby one jack and form can remain at rest while the other jack and form are in operation, substantially as described.”

A useful feature of the machine is the means for maintaining the shoe and sole properly positioned on the jack during the leveling operation. It is important to do this, but it was a difficult problem because at different times every point of the sole is under pressure. The means disclosed in patent No. 997,798, July 11, 1911, Frasier, was a clamp arranged to engage the heel of the sole while the heel was not under pressure, and to let go of the sole momentarily as the form approached and engaged the heel end of the sole. This means is defined in all of the thirteen claims of this Frasier patent No. 997,798. A typical claim is the eighth:—

“8. A sole pressing machine, having, in combination, a shoe supporting jack, a sole pressing form, means for actuating the jack and form to subject the sole of a shoe supported upon the jack to a rolling pressure, a sole clamp mounted to move into and out of engagement with the sole of the shoe, and means for moving the clamp, substantially as described.”

**BEVELING MACHINE — MODEL B: HERCULES.**

The commercial Hercules leveling machine as put out between 1903, when it was adopted, and 1905 had proved inconvenient for the operator because the pressing form was in his way while he was applying the shoe to the jack, or removing a shoe from it. The machine was accordingly reorganized to overcome this difficulty and the new machine was first supplied to manufacturers in June, 1905, the reorganized machine being known as "Leveling Machine, Model B, Hercules". The average output of the new machine is from 1400 to 1600 pairs of shoes a day as compared with an average of 1200 to 1400 pairs per day on the earlier model. This model B machine, which is the present standard commercial machine, embodies all the mechanisms set forth in the patents which have been discussed in connection with the earlier model, which, since the adoption of the model B machine, has been known as "Model A". But the reorganized machine also incorporates in its present commercial form a number of improvements which have been made since it was adopted.

The first of these improvements is an improved form of heel-engaging mechanism, for properly locating the work on the form, as has been explained. This improvement was adopted in May, 1907, and is shown in the drawings and defined in the claims of patent No. 944,620, December 28, 1909, Holt, of which a typical claim is the second:—

"2. A sole pressing machine, having, in combination, a pivotally mounted last carrier, including a last post, a form carrier co-operating therewith to subject the sole of a shoe to a rolling pressure, a heel clamp mounted on the last post, and means acting automatically to move the clamp into and out of engagement with the shoe."

The heel clamp of this Holt patent which has been used in the commercial machine since its adoption in 1907 is also defined in broader terms in the ten claims of Frasier patent No. 997,798, of which claim 8 has already been quoted.

In 1912 the model B Hercules machine was further improved by the incorporation in it of improved means for adjusting the jack

and locking it in adjusted position to vary the amount of pressure exerted by the machine in accordance with the thickness of the sole. This improvement is defined in the first claim of patent No. 982,267, January 24, 1911, Gouldbourn.

Since the machine was first adopted in April, 1903, 729 Hercules leveling machines have been put out by the United Company up to March 1, 1913. As I have already stated, the average day's work on the present model of the machine is from 1400 to 1600 pairs per day, and as has also been explained this machine is adapted for leveling heavy shoes such as men's McKay sewed and nailed shoes. It is particularly useful on heavy shoes because in this type of machine in which the pressure is exerted progressively only a narrow portion of the sole extending transversely across the sole is under pressure at one time and the amount of pressure required for heavy shoes can be safely exerted in this manner without danger of breaking the iron form or last upon which the shoe is mounted.

#### LEVELING MACHINE: ATLAS.

"Leveling Machine, Atlas", is of the type known as the "direct pressure type". This type of machine is provided with a form of jack which supports the shoe, and with a co-operating pressing form which engages the sole of the shoe, pressure being exerted through these two forms in a right line and being applied directly to the whole surface of the sole at once.

A distinguishing characteristic of the Atlas leveling machine is that it was the first leveling machine in the industry which was organized to adjust the machine automatically to various thicknesses of work, and then exert uniform pressure upon the sole of the shoe, irrespective of its thickness. Hence this machine is particularly adapted to operate upon lighter weight McKay sewed shoes such as could not withstand the relatively harsher action of the Hercules leveling machine, which would frequently distort the soles of lighter weight shoes. This characteristic of the Atlas machine is defined in the first claim of patent No. 557,744, April 7, 1896, Winkley, which is as follows:—

"1. In a sole laying machine the combination of a pressing form and shoe supporting jack, mechanism for relatively actuating the form and jack to secure pressure upon the sole of a shoe placed upon the jack, and means for automatically seating the form, in operative connection with said pressure mechanism, and acting to adjust the said pressure mechanism for shoes of different heights, substantially as described."

This characteristic principle of operation of the Atlas machine is further set forth in patent No. 627,034, June 13, 1899, Winkley, of which claim 1 is as follows:—

"1. In a sole pressing machine, the combination with a jack and form, of independent mechanisms operating automatically and successively to seat the form and to bring the form and jack into a position of pressure, substantially as described."

The machine of patent No. 627,034 was only an experimental machine, and was not put into commercial use. An important step in the development of that experimental machine toward a commercial machine is represented in patent 818,503, April 24, 1906, Winkley, and is defined in several claims of that patent, of which the third is typical:—

"3. A sole pressing machine, having, in combination, a plurality of shoe supporting jacks, a plurality of pressing forms, cooperating respectively therewith, mechanism for relatively actuating the jacks and forms to cause each jack and its cooperating form to press the sole of a shoe placed on the jack, comprising means for imparting relative vertical movements to each jack and form to produce pressure and clearance, means controlled by the operator for connecting each jack with said actuating mechanism, and automatic means for disconnecting each jack therefrom, substantially as described."

The first commercial Atlas leveling machine was constructed substantially as shown in the drawings and described in the nineteen claims of patent No. 818,504, April 24, 1906, Winkley. The more important improvements set forth in the claims of this patent are well described in the first two claims, which are as follows:—

"1. A sole pressing machine, having, in combination, a shoe supporting jack, a sole pressing form, mechanism acting automatically to bring the jack and form into a position of pressure to hold the jack and form in such position and thereafter separate the jack and form, and means for varying the time during which the jack

and form are held in a position of pressure, substantially as described.

"2. A sole pressing machine, having, in combination, a shoe supporting jack, a sole pressing form, mechanism for relatively actuating the jack and form to press the sole of a shoe, means acting automatically to stop said mechanism with a jack and form in a position of pressure, and means acting automatically to thereafter start said mechanism into operation, substantially as described."

The machine organized as set forth in the claims above quoted was the first leveling machine in the art to provide for holding the shoe under pressure for a predetermined time, and was also the first machine in the industry in which there was provision for varying this predetermined time. While the machine shown in this Winkley patent No. 818,504 was used commercially for some two years, it was not entirely satisfactory through lack of certainty in its operation and on account of excessive breakage of parts. The machine was therefore reorganized in successive stages which are represented in patent No. 845,714, February 26, 1907, Mayo, and set forth in eleven claims of that patent, and in patent No. 881,478, March 10, 1908, Mayo, which shows the commercial Atlas leveling machine as now put out. A typical claim of patent No. 845,714 is the first:—

"1. A sole pressing machine, having, in combination a plurality of shoe supporting jacks, a plurality of cooperating sole pressing forms, mechanism for relatively actuating each jack and its cooperating form to press the sole of a shoe, connecting devices for operatively connecting the jacks and forms to said mechanism, and means controlled by the operator for positively actuating said devices to operatively connect each jack and its cooperating form to said mechanism."

The present commercial Atlas leveling machine embodies the mechanisms set forth in the claims of the following patents:—

- No. 627,034, June 13, 1899, Winkley.
- No. 818,503, April 24, 1906, Winkley.
- No. 818,504, April 24, 1906, Winkley.
- No. 845,714, February 26, 1907, Mayo.
- No. 881,478, March 10, 1908, Mayo.
- No. 930,823, August 10, 1909, Winkley.

Over 600 Atlas leveling machines have been put out by the United Company. The machine has an average capacity of from 1000 to 1200 pairs of shoes per day.

Both leveling machine, Hercules, and leveling machine, Atlas, are put out by the United Company through its general department.

Mr. WEBSTER. Counsel for petitioner objects to all statements made by the witness in the foregoing answer relating to mechanisms not shown in patents issued prior to the filing of the petition herein, and to all statements made by the witness in reference to matters which have not been presented by the petitioner before the examiner, on the ground that the same is incompetent, inadmissible and immaterial and in no sense in reply to or in defence of matters presented before the examiner by the petitioner.

Int. 107. Have you collected in a single volume the patents relating to the Goodyear turn leveler, Hercules leveler and the Atlas leveler referred to in your preceding answer? If so, will you produce that volume?

Ans. I produce a volume comprising all of the patents referred to in my testimony regarding the three machines named.

Mr. PHILLIPS. I offer in evidence this volume of patents relating to Hercules, Atlas and Goodyear turn leveling machines.

[*One volume of patents relating to Hercules, Atlas and Goodyear turn leveling machines marked "Defendants' Exhibit 188".*]

Int. 108. Will you please name the number, the date and the patentee of the several patents contained in the volume just offered in evidence and marked "Defendants' Exhibit 188"?

Ans. No. 557,744, April 7, 1896, Winkley.

No. 563,487, July 7, 1896, Howe.

No. 627,034, June 13, 1899, Winkley.

No. 818,503, April 24, 1906, Winkley.

No. 818,504, April 24, 1906, Winkley.

No. 845,714, February 26, 1907, Mayo.

No. 861,746, July 30, 1907, Mayo.

No. 881,478, March 10, 1908, Mayo.

No. 884,144, April 7, 1908, Frasier. -

- No. 916,021, March 23, 1909, Rigby.
- No. 925,509, June 22, 1909, Rigby.
- No. 930,823, August 10, 1909, Winkley.
- No. 932,220, August 24, 1909, Winkley.
- No. 944,620, December 28, 1909, Holt.
- No. 982,267, January 24, 1911, Gouldbourn.
- No. 996,707, July 4, 1911, Eppler.
- No. 997,798, July 11, 1911, Frasier.
- No. 1,004,155, September 26, 1911, Eppler.

*Int.* 109. In the list of machines produced by you and read into the record in a prior portion of your testimony, you refer to clicking machine, model C, Ideal, as being first put out in March, 1908, by the United Shoe Machinery Company through its general department. What is the function of a clicking machine in the process of the manufacture of shoes? How was this work performed prior to 1899 and what advancement has been made by the United Shoe Machinery Company in this art since that date? If such advancements are disclosed in Letters Patent of the United States of the United Company, state the patents.

Mr. WEBSTER. Question objected to by counsel for the petitioner on the ground that it calls for testimony in reference to matters to which no reference has been made in the evidence heretofore submitted by the petitioner, and because it calls for matters that are in no wise in reply to or in defence of any matters presented by the petitioner before the examiner.

#### CLICKING MACHINE — MODEL C : IDEAL.

*Ans.* The clicking machine supplied to manufacturers by the United Shoe Machinery Company was designed, and is adapted, for use in the shaping of the parts of uppers of boots and shoes.

In 1899, and prior to that time, nearly all of the shaping of parts of uppers was done by a hand operation. The workman placed a skin of leather on a cutting table, located a pattern upon the skin and cut out the upper blank by running a knife around the edge of the pattern. I produce a number of patterns such as were used in that hand operation.

[Four patterns used in hand cutting of uppers are introduced in evidence, and marked "Defendants' Exhibit 189".]

[Answer to Int. 109 continued:]

To a very small extent the parts of uppers of coarse, heavy shoes were dyed out by means of handled dies. Such dies were placed upon the skin by the workman and forced through the stock by striking the die with a mallet. To a very limited extent also uppers of coarse, heavy shoes, such as brogans, were died out on sole-cutting machines. Neither of these dieing out methods, however, was suited for the shaping of parts of uppers for the medium or better grades of shoes, and before 1908 the parts of uppers of nearly all shoes were shaped, as first explained, by cutting around the pattern with a hand knife.

The United Shoe Machinery Company developed a machine for shaping parts of uppers which was first put out for commercial use in the United States in March, 1908, and is officially named "Clicking Machine, Model C, Ideal". This machine was the first commercially successful machine ever produced for this work. It seems strange that this important and expensive step in the manufacture of shoes had remained a hand operation until so late a date. The explanation probably is that the character of the work is unique, depending largely for its success upon the eye, skill and judgment of the operator. The skins from which upper blanks are cut vary largely in quality in different parts of the skin. The best portions must be utilized for the vamps, that is, the portion of the upper which extends upwardly from the sole and around the ball of the shoe, because that portion of the upper is the most conspicuous in the finished shoe and is subjected to the most wear. The next best portion of the stock must be used for quarters, that is, the parts above the vamp in which the eyelets, lacing hooks or buttons are set. Smaller parts of the best portions of the stock must be utilized for toe tips, and the other parts left after the cutting out of the vamps, uppers and tips must be utilized to the best advantage for other small and less conspicuous parts of the upper. The success of this hand operation depends entirely upon the workman's skill and judgment in selecting the portions of the skin

to be cut for the respective parts of the upper, and in so cutting the parts as to utilize the stock to the best advantage, avoiding any unnecessary waste. Probably the controlling reason why a machine for doing this work was never produced before 1908 was that it is impossible to dispense with this skill and judgment of the workman. Prior to the invention of the United Company's machine no one had been able to produce a machine by which the operation could be so performed as to utilize to the same extent as in hand work the skill and judgment of the operator, and at the same time enable the workman to do a sufficiently increased amount of work to justify the use of the machine. The solution of the problem by the United Company was to provide a machine organized to perform the purely mechanical work done by the hand workman, while at the same time affording full opportunity for the exercise of the requisite skill and judgment. The machine as first constructed is shown in patent No. 921,503, May 11, 1909, Bates. This machine was provided with a die block for supporting a skin to be operated upon, with which were used shallow, open dies with cutting edges shaped to the contours of the blanks which were to be cut. I produce a number of these dies of different shapes.

[*Four dies used on clicking machines are introduced in evidence, and marked "Defendants' Exhibit 190".*]

[*Answer to Int. 109 continued:*]

In the operation of the machine each die was in turn located upon the skin by the operator just as he had been accustomed to locate the upper pattern, with the advantage that as the die was shallow and open he could see the skin inside the die which was to constitute the blank, and which he could not see when the pattern was on the stock in the hand operation. The die was forced through the stock by a pressure arm which was mounted on a column behind the die bed and arranged to be swung to one side entirely out of the way of the operator so that he could inspect the stock as fully and conveniently as he had been accustomed to do in the hand operation, and after he had located the die properly he moved the arm over the die bed and operated the machine to force the die through the stock. This pressure arm was provided with a handle

to facilitate its swinging by the operator, and that handle was connected with a light tripping device for actuating the mechanism for operating the pressure arm so that the operator could, by merely depressing lightly the handle by which he had swung the pressure arm over the die, effect the operation of the pressure arm and then swing it out of the way, exposing the skin again for convenient inspection of the stock and another positioning of the die. The reciprocation of the pressure arm took place in one-sixth of a second, and the machine was so organized as to prevent a second reciprocation of the pressure arm, with the attending danger of injuring the operator, the blank or the skin. The organization by which these and other advantages are secured in the commercial machine is set forth in all of the seventy-three claims of patent No. 921,503, May 11, 1909, Bates. Typical claims are the following:—

“ 2. In a machine for dieing out thin sheet material such as upper leather for boots or shoes, the combination with a bed, of a presser member movable laterally with respect to said bed, means for reciprocating said presser member toward and away from said bed and a starting device movable laterally with said presser member.”

“ 10. In a machine for dieing out thin sheet material such as upper leather for boots or shoes, the combination with a bed, of a free movable die, a presser member laterally movable into different operative positions over such bed, automatic mechanism for moving said presser member toward said bed into a position at a predetermined distance from said bed, means for adjusting the machine to vary the predetermined distance, and a light, quick acting device for rendering said mechanism operative at any point in the lateral movement of the presser member.”

“ 22. In a machine for dieing out thin sheet material such as upper leather for boots or shoes, the combination with a cutting bed, of a free movable die, a presser member movable into a position over the die wherever located on the bed, and automatic mechanism for moving the presser member toward the bed to force the die through stock supported on the bed, both of said operations being controlled by the hand of the operator.”

“ 66. A machine for dieing out thin sheet material, such as upper leather for boots or shoes, comprising a cutting bed, a free die movable over said bed, a presser member movable from a position at one side of the die into a position over the die, mechanism for moving the presser member toward the bed to force the die through

stock supported on the bed, and then moving the presser member away from the bed, a device for rendering said mechanism operative, and means whereby the presser member is positively restricted to a single reciprocation for each actuation of said device, and is automatically stopped in raised position at the end of every reciprocation."

The machine as first put out, and as always since constructed, was also provided with means for holding and protecting the surplus stock, that is, the portions of the skin remote from the part being cut, from being soiled by oil through contact with parts of the machine, as set forth in the nine claims of patent No. 950,986, March 1, 1910, Bates, of which a typical claim is the following:—

"3. In a machine of the class described, the combination of a bed, a presser-applying member movable laterally into and out of position over said bed, a support for said member located at one side of the bed, said parts being arranged to provide a recess between the support and the bed, and a trough in said recess, interposed between the bed and operating parts of the machine, to receive surplus stock and hold it out of contact with parts of the machine."

The starting mechanism of this machine is described in all of the thirteen claims of patent No. 1,011,903, December 19, 1911, Bates (application filed July 11, 1908).

In August, 1909, the convenience of the operator in using the machine was increased by providing a convenient receptacle for the scraps of leather which are constantly being produced in the operation of the machine, and which are preserved and sold by the manufacturer. This waste guide is arranged in front of the machine, and is so organized that the receptacle closes up out of the way of the operator as he leans over the die bed to inspect the skin and to locate the die, and automatically opens when the operator stands erect to operate the machine or to brush the scrap leather off the die bed. This organization is set forth in many claims of patent No. 946,619, January 18, 1910, Sherman, of which typical claims are the 10th and 12th:—

"10. The combination with a work support of a normally open waste guide constructed and arranged to be moved to closed posi-

tion and to return automatically to open position when the closing pressure is removed."

" 12. The combination with a work support, of a yieldingly-mounted waste guide, arranged to be moved to closed position as the body of the operator comes in contact therewith in approaching said support, and to automatically move to open position as the operator moves away from said support."

In the operation of the commercial machine as it was first used, rapid operators would sometimes start the mechanism for depressing the pressure arm so that the arm would go down before its lateral swinging positioning movement was completed, thus striking an oblique blow, which sometimes injured the stock, the die, or the cutting block, and occasionally all of them. To remedy this the United Company's inventors developed a mechanism for stopping the lateral swinging movement of the pressure arm before it engaged the die in its downward movement. A further improvement which added to the convenience of the workman in operating the machine, and which was adopted at the same time, comprised means for automatically swinging the pressure arm to one side after the die had operated, relieving the operator of the necessity of swinging the arm laterally with his hand. A reorganized machine incorporating these two improvements was commercially adopted in the latter part of 1909, and is the present commercial machine. Three different inventors had a part in the development of this new organization. Successive steps in the experimental work resulting in the new machine, and different features of its organization, are represented in the claims of four patents, from which I will quote typical claims.

Twenty-three claims of patent No. 968,117, August 23, 1910, Buckminster, set forth this organization in broad terms:—

" 7. A machine of the class described, comprising a bed, a die freely movable over said bed, a pressure applying member having a pressure surface area less than that of the bed and movable into operative position over the die wherever located on the bed, means for moving said member toward and away from the bed to cause it to engage the die and effect a pressing operation, and automatic means for preventing movement of the pressure applying member over the bed at the time it engages the die in the pressing operation."

Claim 4 of patent No. 1,006,453, October 24, 1911, Ashworth, is as follows:—

"4. In a machine of the class described, the combination with a bed, a die movable over said bed, and a pressure applying member movable over said bed into operative position above said die, of means for actuating said pressure member to apply pressure to said die, and means for automatically moving said member out of its operative position over said die after such actuation."

A typical claim of patent No. 1,010,476, December 5, 1911, Buckminster, is as follows:—

"52. In a machine for dieing out leather for boots and shoes, the combination of a cutting bed, a presser member freely movable laterally over said bed into operative position, and means acting to automatically move the presser member laterally into inoperative position."

The new organization is defined in all of the thirty-seven claims of patent No. 1,004,757, October 3, 1911, Eaton, which shows in its drawings the organization of the present commercial machine. A typical claim of this patent is the fourteenth:—

"14. A machine of the class described having in combination, a bed, a presser member manually movable over the bed into operative positions over different parts of the bed and movable toward and away from the bed to effect a pressing operation, and means for utilizing the momentum of the presser member acquired in its manual movement into operative position to effect its movement out of operative position after the pressing operation."

During the year 1911 there were adopted improvements in the machine for facilitating the cutting simultaneously of many thicknesses of cloth lining material from a roll supported outside of the die bed, on which improvements has been granted patent No. 1,070,-133, August 12, 1913, Howe (application filed April 3, 1912), of which a typical claim is the first:—

"1. In a machine of the class described, the combination with a bed for supporting material to be cut and a presser member movable into engagement with a die supported upon said material, of means for clamping during the cutting operation a portion of said material that projects beyond the edge of the bed."

The use of the Ideal clicking machine effects a distinct improvement in quality and a striking economy over hand work in the cutting of uppers. In Brockton, where cutters are paid by the day, an operator using a machine dies out on an average over 80 per cent more blanks than he formerly shaped by hand. Cutters are paid \$3.50 a day in the Brockton district for operating a machine as compared with \$3.25 for hand work, but notwithstanding this increased cost of labor the average saving to the Brockton manufacturer by the use of the clicking machines is over two cents per pair. Use of the machine also effects an additional saving in stock of from 2 to 5 per cent as compared with hand cutting, since all waste caused by deviation from the pattern or by cutting beyond a corner of the pattern by the hand knife is obviated. The amount of the saving in stock, of course, varies with the quality of the stock and on high-grade leather is considerable, frequently amounting to more than the saving in labor.

The demand of shoe manufacturers for the Ideal clicking machine has exceeded the demand for any other new machine which has ever been produced by the United Company. At one time the company was 440 machines behind in filling its orders, and during the last six months of 1908 the company was all the time more than 400 machines behind in its orders. For several years the capacity of the factory was taxed in the building of these machines. During the last six months of 1909 over forty machines were shipped each week. At this date, over 6000 of the machines have been put into shoe factories in the United States. The machine is put out by the United Company through its general department.

The problem of providing dies for the clicking machine was one which had to be met by the United Company at the outset. Prior to the introduction of the clicking machine all dies used in the shoe industry, particularly for cutting sole leather, were made by skilled die makers. Within a short time after the clicking machine was first put into use the demand for dies became so great that it could not have been supplied by these skilled die makers if all in the country had spent their time exclusively in the making of dies for the clicking machine. For this reason, and because it

was important that the dies should be furnished to shoe manufacturers at a price much less than would be necessary if the dies were made by high-priced skilled die makers, the United Company developed an entirely new method by which unskilled labor could be employed for manufacturing clicking dies, and all dies which have been supplied by the United Company for use on the clicking machine have been manufactured in accordance with this method. Successive steps in the development of this method are represented by the following patents:—

No. 922,926, May 25, 1909, Lynch.

No. 1,029,877, June 18, 1912, Lynch (application filed April 23, 1909).

No. 1,030,641, June 25, 1912, Braden (original application filed December 9, 1909).

No. 1,030,781, June 25, 1912, Hollander (application filed March 16, 1910).

Of the twenty-two claims of patent No. 922,926, Lynch, all of which describe steps performed in the making of the dies, claim 4 is typical:—

"4. That improvement in the art of making dies which consists in bending to the outline of the desired pattern to be cut by said die material somewhat longer than said outline and butt welding together the ends of said material and at the same time forcing said ends together to reduce the blank or die thus formed to the size of the pattern, and maintaining the cutting edges on the ends in alignment during the butt welding operation."

The first dies made by the company gave trouble, owing to the unequal hardening of the cutting edge, so that the commercial method was improved in November, 1908, by including the method of patent No. 1,029,877, June 18, 1912, Lynch, granted on an application filed April 23, 1909. All of the ten claims of this patent describe steps now practiced in the making of the dies. Claim 1 is typical:—

"1. That improvement in the art of hardening and tempering tools which consists in simultaneously heating different parts of the tool in different contiguous heat conducting mediums so arranged and of such relative conductivity that the part of the tool

to be hardened is heated to the desired hardening temperature and that the adjacent part is heated detrimentally from the part to be hardened, and then entirely removing said tool from the heat conducting medium and immersing it forthwith in a hardening bath."

Further improvements in the method and apparatus for performing it were described in the claims of patent No. 1,030,641, June 25, 1912, Braden (granted on an application originally filed December 9, 1909), and in the claims of patent No. 1,030,781, June 25, 1912, Hollander (granted on an application filed March 16, 1910), and it is anticipated that further patent protection will ultimately be obtained upon steps which are practiced in the making of the dies. Since the first clicking machine was put out for commercial use in March, 1908, and up to September, 24, 1913, the United Company has manufactured and supplied 783,465 clicking dies, all made in accordance with this method.

Like the Ideal clicking machine, dies for that machine are supplied to manufacturers by the United Company through its general department.

**Mr. WEBSTER.** The answer is objected to for that it contains statements in reference to mechanisms, methods and apparatus not shown and claimed in patents issued prior to the filing of the petition herein. And the same is further objected to for the reason that it is not in any sense in reply to, or in defence of, evidence submitted by the petitioner before the examiner.

*Int.* 110. Have you collected under one cover the several patents referred to by you in your answer to the last question relating to clicking machines; if so, will you please produce that volume?

**Mr. WEBSTER.** The introduction of patents issued after the date of the filing of the petition herein is objected to as incompetent, inadmissible and immaterial.

**Ans.** I produce a volume comprising copies of the patents mentioned in the foregoing answer relating to clicking machines and clicking machine dies.

[*Volume of copies of patents relating to clicking machine and clicking machine dies is introduced in evidence, and marked "Defendants' Exhibit 191".*]

*Int.* 111. Will you give the number, date and name of patentee of the several patents contained in the volume which has just been offered in evidence as Defendants' Exhibit 191?

*Ans.* No. 921,503, May 11, 1909, Bates (continuation of application filed October 8, 1906).

No. 922,926, May 25, 1909, Lynch.

No. 946,619, January 18, 1910, Sherman.

No. 950,986, March 1, 1910, Bates.

No. 968,117, August 23, 1910, Buckminster.

No. 1,004,757, October 3, 1911, Eaton.

No. 1,006,453, October 24, 1911, Ashworth.

No. 1,010,476, December 5, 1911, Buckminster.

No. 1,011,903, December 19, 1911, Bates (application filed July 11, 1908).

No. 1,029,877, June 18, 1912, Lynch (application filed April 23, 1909).

No. 1,030,641, June 25, 1912, Braden (application filed December 9, 1909).

No. 1,030,781, June 25, 1912, Hollander (application filed March 16, 1910).

No. 1,070,133, August 12, 1913, Howe (application filed April 3, 1912).

*Int.* 112. In the list of machines produced and read into the record by you as a part of your prior testimony, you refer to the lacing machine, Ensign, models A and B, as put out February, 1906, by the United Company through its fitting room department. Please state what is the function of this machine in the process of making shoes. If this Ensign lacing machine as put out in February, 1906, by the United Company embodied any mechanisms or devices which form the subjects-matter of Letters Patent of the United Company, state the patent and the importance of such mechanism or devices.

Mr. WEBSTER. The question is objected to for that it calls for matters in no sense in reply to, or in defence of, evidence or matters submitted by the petitioner either before the examiner or elsewhere.

*Ans.* In the process of manufacturing a laced shoe it is necessary for good shoe making that the shoe be laced before it is lasted, since owing to the tension exerted upon the upper all around the shoe, including the ball, during the lasting operation the exposed eyeleted edges of the upper would be pulled apart and the shoe would be distorted unless in some way these eyeleted edges were held the proper distances apart during the lasting operation. This danger will be immediately noted upon examining some of the defendants' exhibits, for example, Defendants' Exhibit 8. Unless the eyeleted edges of the shoe of Defendants' Exhibit 8 had been secured against relative displacement during the lasting operation, it would have been practically impossible to have maintained the proper relation of the opposed eyeleted edges during the lasting operation.

#### LACING MACHINE — MODEL A : ENSIGN.

In most shoe factories, it is the practice preliminary to lasting to lace a number of eyelets with twine, which is tied to insure the proper relative positions of the opposed eyeleted edges during the lasting operation. This lacing was done in 1899 by girls, who passed twine through the eyelets much as a shoe lacing is inserted through the eyelets of a shoe, and who tied the ends of the twine after passing it through the eyelets. Until 1906 this operation was always performed by hand. Since that date the operation has been performed automatically upon a machine known as "Lacing Machine, Ensign", which laces the twine through the eyelets, severs the twine from the source of supply, and ties the ends.

The operation of this Ensign lacing machine is illustrated in Defendants' Exhibits 7, 149, 178 and 182.

Excepting one or two experimental lacing machines put out by the Smith Lacing Machine Company, the first lacing machine ever commercially used in the manufacture of shoes was put out by the United Shoe Machinery Company in February, 1906.

As it is now being supplied to manufacturers, the Ensign lacing machine embodies the mechanisms set forth in the claims of the following patents : —

Reissue No. 12,638, April 23, 1907, Smith (original patent No. 779,008, January 3, 1905).

No. 855,969, June 4, 1907, Paine and Winkley.

No. 946,789, January 18, 1910, Smith.

No. 962,105, June 21, 1910, Smith.

No. 1,030,547, June 25, 1912, Smith (application filed March 31, 1908).

No. 1,030,559, June 25, 1912, Alexander (application filed September 7, 1909).

No. 1,030,573, June 25, 1912, Enslin (application filed January 30, 1908).

No. 1,030,619, June 25, 1912, Smith (application filed January 16, 1906).

No. 1,030,753, June 25, 1912, Smith (application filed September 8, 1908).

The first commercial lacing machine, now known as model A, was constructed substantially as shown in patent No. 962,105. That machine was put out until the latter part of 1908. In the latter part of 1907 and in the early part of 1908, the model A machine was redesigned to incorporate improvements in nearly all of the mechanisms of the machine, which improvements had been developed since the model A machine was first put out. That redesigned and improved machine, known as "Lacing Machine, Model B, Ensign", has been the standard commercial machine supplied by the company since 1908. As first put out it was constructed substantially as shown in the drawings of patent No. 1,030,573, June 25, 1912, Enslin (application filed January 30, 1908), except for some improvements which were incorporated in the machine during its reorganization, and which were made after the filing date of the application for the Enslin patent.

The development of the lacing machine into commercial form and the steps in that development are represented by the following patents: —

No. 855,969, June 4, 1907, Paine and Winkley.

Reissue No. 12,638, April 23, 1907, Smith (original patent No. 779,008, January 3, 1905).

No. 962,105, June 21, 1910, Smith.

Discussing first the successive stages of the development of the machine as indicated by these patents, the fundamental requisites for a machine for lacing uppers are that the thread be passed through the eyelets and that for this operation the eyelets be properly located; that sufficient slack be produced in the thread to allow the opposite edges of the lacing slit to assume and maintain their proper relations during the lasting operation, and that the ends of the lacing be secured to make the lacing effective.

Elements fulfilling these fundamental requisites of a lacing machine are defined in the claims of patent No. 855,969, June 4, 1907, Paine and Winkley. Eleven claims of this patent define broadly the organization of the commercial machine in all stages of its development. Typical claims of this Paine and Winkley patent are the following: —

"35. A shoe lacing machine having, in combination, means for passing a continuous thread through the eyelet holes of an upper to form a lacing and for securing the ends thereof, and means for producing a predetermined amount of slack in said lacing to permit the edges of the lacing slit to be positioned properly on the last."

"38. A shoe lacing machine, having, in combination, a thread supply, means for holding the free end of the thread, and means for passing a continuous thread from said supply through the eyelet holes of an upper to form a lacing and for securing the ends thereof."

"45. A shoe lacing machine, having, in combination, means for passing a continuous thread through the eyelet holes of an upper to form a lacing, and means passing through aligned eyelet holes in opposite sides of the upper to locate the eyelet holes in position to receive the lacing."

The machine of this Paine and Winkley patent was only experimental, and was never used commercially. That experimental machine had but a single needle.

The next important step in the development of a commercial lacing machine was a machine organized with a plurality of needles which could lace at one operation a plurality of eyelets. This step in the art is represented by reissued patent No. 12,638, reissued April 23, 1907, Smith. All of the twenty-five claims of this pat-

ent describe mechanisms embodied in the commercial machine. A typical claim is the twenty-fifth :—

" 25. In a machine of the character described, means comprising a plurality of needles for engaging and locating a plurality of pairs of eyelets of a shoe upper, and forming therein a series of connected loops, and means for completing the lacing and for securing the ends of the lacing to prevent withdrawal."

The first commercial successful machine is shown and described in the patent No. 962,105, June 21, 1910, Smith. The most important of the improvements illustrated in the drawings and set forth in the claims of this patent were the means for effecting simultaneous adjustment of the needles for spacing them in accordance with the spacing of the eyelets, that is, the distance apart of the eyelet in the upper on the same side of the lacing slit, and means for quickly adjusting the organization of the machine so that as the result of its operation the opposed eyeleted edges of different styles of uppers would be located at the desired distances apart. The organizations by which these and other advantages were secured are defined in nearly all of the forty claims of this patent No. 962,105, and nearly all of those claims set forth mechanisms which are now embodied in the standard commercial machine. Typical claims setting forth the improvements to which I have specifically referred and which are embodied in both models of the Ensign lacing machine are 7 and 13 :—

" 7. A machine for lacing shoe uppers, having, in combination, a plurality of needles arranged to pass a series of loops of lacing cord through the eyelet holes of an upper, and means for simultaneously adjusting said needles to space the needles in accordance with the spacing of the eyelet holes in the upper to be laced."

" 13. A machine for lacing shoe uppers, having, in combination, means including a plurality of needles for forming loops in a lacing cord and for passing said loops through the eyelet holes of an upper and means for simultaneously adjusting the length of a plurality of said loops to vary the amount of slack in the completed lacing."

#### LACING MACHINE — MODEL B: ENSIGN.

The machine shown in this Smith patent No. 962,105 was the commercial machine for some two years. That machine has been

known as the "Model A Machine" since it was reorganized in 1908 to incorporate improvements in nearly all of its mechanisms which had been made during the two years of its commercial use. It should be understood, however, that the reorganized machine, now known as the "Model B Machine", embodied the organization broadly defined in the claims which have been quoted in reviewing the development of the machine.

The more important improvements embodied in the redesigned or model B machine are set forth in the claims of patent No. 1,030,547, June 25, 1912, Smith (application filed March 31, 1908), and patent No. 1,030,573, June 25, 1912, Enslin (application filed January 30, 1908).

Referring only to the two more important improvements over the model A machine which have been incorporated in the model B machine, the first of these had to do with providing an extra amount of slack in the lacing cord. It had been found in the commercial use of model A machines that on certain kinds of work a greater amount of slack in the lacing cord or thread is needed than is usually required; for example, in blucher shoes additional slack in the lacing cord is needed in order to permit the lower ends of the opposed eyeletted edges to assume their proper position on the last, and the relative positions which they should have in the finished shoe. The patent to Smith No. 1,030,547 defines in its claims means for securing such slack thread when required. The first claim of this patent is as follows:—

"1. A machine for lacing shoe uppers, having in combination, means for forming a series of loops of lacing cord, and thereafter inserting said series of loops in the eyelet holes of an upper, and additional means for varying the amount of slack in the completed lacing, substantially as described."

Twenty-nine of the claims of this Smith patent No. 1,030,547 set forth mechanisms embodied in the model B machine. While the mechanism set forth in this patent provided means for securing the requisite additional amount of slack in the lacing cord, it was found that the slack which was formed by that mechanism was not retained where it was needed, that is, at the lower end of the

lacing, and for the lower pair of opposed eyelets. Accordingly, the mechanism of the Smith patent was improved by organization of the slack thread mechanism so that it would not only properly form the desired additional slack in the thread, but would retain that slack where it was needed, that is, at the lower end of the lacing. This improvement is set forth in claim 23 of patent No. 1,030,573, June 25, 1912, Enslin (application filed January 30, 1908), which claim is as follows:—

“23. A machine for lacing shoe uppers, having, in combination, means for inserting a lacing cord in the eyelet hole of an upper, mechanism for tying the ends of the lacing together, and means acting on the lower portion of the lacing to provide slack therein, substantially as described.”

The other more important improvement which was embodied in the model B machine is shown in this Enslin patent No. 1,030,573, and consisted in means for effecting the simultaneous adjustment of the loopers and the needles which co-operate in the machine in forming loops to be passed through the eyelet holes, thus adding to the convenience of the operator and insuring greater accuracy in the work by enabling these parts to be positioned for different spacing of the eyelets by one adjustment instead of two separate adjustments. A number of claims of the Enslin patent are directed to this improvement, and a typical claim is the second:—

“2. A machine for lacing shoe uppers, having, in combination, a plurality of needles, means co-operating therewith to form a series of loops in the lacing cord, and means for simultaneously adjusting said needles and co-operating means to space the same in accordance with the spacing of the eyelet holes in the upper to be laced, substantially as described.”

A number of other improvements embodied in the model B machine are set forth in the claims of this patent No. 1,030,573, all of the fifty-nine claims of which define mechanisms embodied in the commercial model machine. Further improvements which were incorporated in the model B machine in 1909, and have been embodied in the commercial machine as put out since that time, are set forth in eight claims of patent No. 1,030,559, June 25, 1912, Alexander (application filed September 7, 1909). Other improve-

ments were incorporated in the machine in 1912, for which patent protection has not yet been obtained.

Comparing the machine with hand work, on the better grades of shoes where particular pains were taken to locate the opposed edges at the proper distance apart, the average day's work by the hand operator was 500 pairs. On the medium and cheaper grades of shoes, where less pains were taken and more or less careless work was done, the average number of pairs laced by hand would be 800. On the Ensign lacing machine the average number of uppers laced is from 1400 to 2500 pairs per day. In some districts 2500 pairs is the regular average day's work on this machine. It should further be noted that, whatever the quality of the shoe, the upper laced on the machine is always laced right, while accuracy could be secured in hand work only by constant and unusual care.

Fourteen hundred and fifteen Ensign lacing machines had been put out up to March 1, 1913, the end of the company's last fiscal year. An Ensign lacing machine will take care of as many shoes as from four to seven welt-sewing machines, and nearly all lace shoes now being made are laced on this machine.

The Ensign lacing machine is now put out by the United Company through its fitting room department, which department was organized just prior to January 1, 1913. Previously the machine was put out through the lasting department.

Mr. WEBSTER. The answer is objected to for that it relates to matters in reference to which no evidence has been presented by the petitioner, either before the examiner or elsewhere; and, further, because the answer refers to a large extent to patents issued after the date of the filing of the petition herein. The answer is further objected to because of the same being largely argumentative.

*Int.* 113. Have you collected in a single volume the patents referred to in your last answer as relating to Ensign lacing machines?

*Ans.* Yes, sir; and I produce a volume comprising all of the patents referred to by me in connection with the Ensign lacing machine.

[*Volume of patents relating to Ensign lacing machine is introduced in evidence, and marked "Defendants' Exhibit 192".*]

Mr. WEBSTER. The introduction of the patents as exhibits is objected to because they relate to matters not touched upon, and upon which no evidence has been submitted, by the petitioner, before the examiner or elsewhere, and, further, all patents issued after the date of the filing of the petition herein are especially objected to on the ground of the same being incompetent, immaterial and inadmissible.

Int. 114. Will you please give the number, date and name of patentee of the several patents contained in the volume which has just been offered in evidence as Defendants' Exhibit 192?

Ans. No. 779,008, January 3, 1905, Smith.

Reissue No. 12,638, April 23, 1907, Smith (original patent No. 779,008).

No. 855,969, June 4, 1907, Paine and Winkley.

No. 946,789, January 18, 1910, Smith.

No. 962,105, June 21, 1910, Smith.

No. 1,030,547, June 25, 1912, Smith (application filed March 31, 1908).

No. 1,030,559, June 25, 1912, Alexander (application filed September 7, 1909).

No. 1,030,573, June 25, 1912, Enslin (application filed January 30, 1908).

No. 1,030,619, June 25, 1912, Smith (application filed January 16, 1906).

No. 1,030,753, June 25, 1912, Smith (application filed September 8, 1908).

Int. 115. What is the function of the machine referred to as trimming machine, Goodyear insole heel seat, in the list of machines submitted by you in your prior testimony? How was the operation, performed by this machine, performed prior to 1899? What has been the development of this art since 1899? If the standard machine put out by the United Company for performing this operation embodies the subjects-matter of any Letters Patent of the United Company, state the patents.

Mr. WEBSTER. The question is objected to for that it calls for testimony with reference to matters not touched upon by the petitioner, and calls for matter which is not in reply to, or in defence of, any evidence submitted by the examiner.

#### TRIMMING MACHINE : GOODYEAR INSOLE HEEL SEAT.

*Ans.* After an insole has been channeled and been tacked to the bottom of the last it is usually necessary to trim the insole around its heel end to shape it accurately to the rear end of the last. While the insole is originally died out to correspond with the pattern of the bottom of the last, it frequently becomes distorted during the channeling operation and during the lip-turning operation, that is, the operation of raising the lip and turning it back upon the bottom of the insole. An insole upon which these operations have been performed is shown in Defendants' Exhibit No. 145. This distortion of the insole takes effect in lengthwise stretching and frequently results, after the insole has been tacked to the last with its forepart fitted to the forepart of the last, as illustrated in Defendants' Exhibit 149, in an excess of stock at the rear end of the insole. To insure a good lasting operation this excess of stock must be trimmed off and the heel end of the insole shaped accurately to the contour of the bottom face of the rear end of the last. This operation was always performed by hand prior to 1899, and in fact was a hand operation until January, 1911.

The United Shoe Machinery Company put out in January, 1911, the first machine ever commercially used for performing this operation of trimming off the excess stock at the rear end of the insole and shaping the rear end of the insole to fit the last accurately. Before this machine was developed many attempts had been made to devise a machine for performing this operation, and several of the United Company's inventors had endeavored to produce a machine for doing this work. One difficulty in performing this operation by machine was that all lasts are provided with iron plates on their bottoms at the rear end to turn over and clinch the nails used in attaching the heel end of the outsole to the shoe, and also the nails which are driven to attach the heel to the shoe.

This iron plate is illustrated in Defendants' Exhibit 145. The insole lies against this iron plate on the rear end of the last, and prior to January, 1911, no machine had been produced which could meet the problem of trimming the heel end of the insole to the contour of the last without ruining the cutter by running it against the iron plate on the bottom of the last.

A further problem which had to be met was that the insole stock is frequently rather soft and flexible, so that it tends to buckle or wrinkle during this trimming operation, and the moment that such buckling or trimming occurs, the accuracy of the cut is defeated.

The first of the problems referred to was met in the machine first put out by the United Company in January, 1911, by an organization comprising a rotary cutter, means for lifting the insole slightly away from the iron bottom of the last into the path of the rotary cutter and means for guiding the insole and the last relatively to the cutter by engagement with the edge of the last close to its tread face. This permitted accurate trimming of the insole to shape it to the contour of the last bottom without any danger of injuring the cutter by running it against the iron plate.

The second problem, that is, the problem of preventing the wrinkling or buckling of the insole in such a manner as to defeat the accuracy of the cut, was provided for in this organization by means for pressing the insole against the device which raised it off the last, thus clamping the insole closely adjacent to the point where the cutter operated. This means, so arranged as to exert pressure yieldingly upon the insole, and mounted for adjusting movement toward and away from the device which lifted the insole off the iron plate, provided the necessary support for the insole close to the point where the cutter was operating, and effectively prevented any buckling or wrinkling of the insole, and, further, enabled the organization to adapt itself to insoles of varying thicknesses. The organization further included means for presenting the insole for the operation of the cutter, which was arranged to afford support for the last, and at the same time to permit the trimming operation to proceed along the straighter side portions of the heel end of the last, as well as around the curved rear end.

This organization is defined in all of the seventeen claims of patent No. 1,076,431, October 21, 1913, Keyes (application filed October 3, 1910). Typical claims of this patent are as follows:—

“1. A machine for trimming to the contour of the heel end of a last the heel portion of an insole attached to the bottom of the last comprising, in combination, a cutter, and guiding means for relatively positioning the last and cutter including a device constructed to extend between the tread face of the last and the insole and of such length and thickness as to raise the insole from the last and permit it to be trimmed by the cutter without interference between said cutter and the edge of the last.

“2. A machine for trimming an insole attached to the bottom of a last comprising, in combination, a cutter, guiding means to engage the sides of the last, a device located adjacent to the cutter to extend between the bottom of the last and the insole, and means to support the insole sufficiently close to the point of operation of the cutter to hold it against any tendency to bend away from the cutter.”

“17. A machine for trimming an insole attached to the bottom of a last comprising a driven cutter, guiding means positioned close to the cutter having a part designed to engage and guide the side surfaces of the last and another part arranged to project between the last bottom and the inner face of the insole, a device arranged to engage the outer face of said sole close to the point of operation of the cutter, and a support for the last constructed to permit movement of the last relatively to the cutter to enable the trimming operation to proceed along the sides of the heel as well as around the end of the heel.”

The method practiced in the operation of this machine is defined in all of the eleven claims of patent No. 1,076,432, October 21, 1913, Keyes (original application filed October 3, 1910). Typical claims of this patent are as follows:—

“1. The method of trimming an insole attached to a last which consists in raising a portion of the insole away from the last, and trimming the raised portion of the insole to the edge contour of the tread face of the last.”

“6. The method of trimming an insole attached to a last which consists in gripping successively different portions of the insole close to points opposite the margin of the tread face of the last and holding said portions away from the last, and trimming said portions of the insole while so held to the dimensions and the edge contour of the corresponding portions of the tread face of the last.”

Further improvements were incorporated in this machine in 1912, for which it is expected that patent protection will eventually be obtained.

One hundred and thirty-three of these insole heel-seat trimming machines have been put out since its introduction in January, 1911. The machine will trim at least 3000 pairs of insoles per day, and at least one operator is trimming 5000 pairs a day on this machine, which will prepare the insoles for from twelve to twenty No. 5 lasting machines. The field for the machine is in the factories where the medium and better grades of welt shoes are made. This trimming machine, Goodyear insole heel seat, is put out by the United Company through its Goodyear department.

Mr. WEBSTER. The answer is objected to for that it relates to matters with reference to which no evidence has been submitted by the petitioner, and because the answer is not in reply to, or in defence of, any evidence submitted by the petitioner before the examiner, and because it relates to none of the issues involved in this cause, and for the reasons aforesaid the answer is inadmissible, irrelevant and incompetent.

*Int. 116. Have you collected under a single cover the patents referred to in your last answer referring to insole heel-seat trimming machines?*

*Ans. Yes, and I now produce the same.*

[*Patents relating to insole heel-seat trimming machines are introduced in evidence, and marked "Defendants' Exhibit 193".*]

Mr. WEBSTER. The introduction of the patents is objected to for the same reasons as the answer was objected to.

*Int. 117. Will you please state the number, date, and name of patentee of the patents which form the exhibit offered in evidence as Defendants' Exhibit 193?*

*Ans. No. 1,076,431, October 21, 1913, Keyes (application filed October 3, 1910);*

*No. 1,076,432, October 21, 1913, Keyes (original application filed October 3, 1910).*

*Int. 118. In the list of machines heretofore submitted by you in a prior part of your testimony (question 7) you refer to the*

jointing machine, Goodyear. What is the function of that machine in the operation of making shoes; how was the work done by that machine prior to 1899? If the United Company are putting out any machines for that purpose which embody mechanism forming the subjects-matter of any Letters Patent of the United Company, state the patents and describe the development of this art since 1899.

Mr. WEBSTER. The question is objected to for that it calls for matter in no sense in reply to, or in defence of, any matters introduced by the petitioner.

#### JOINTING MACHINE : GOODYEAR.

*Ans.* Preparatory to blacking or staining and finishing the edge of a shoe sole, the edge must be finally shaped and smoothed up, and this operation is universally performed by rotary cutters, it being the usual process to use two cutters, one formed to impart the desired shape to the edge of the forepart of the sole, and the other being formed to impart the desired shape to the edge of the shank portion of the sole. After this edge-trimming operation there is left, immediately in front of the breast of the heel, that is, the front face of the heel, a portion of the edge of the sole shank on each side, about one-half an inch long, which has not been shaped in the edge-trimming operation, owing to the inability of operating the rotating shank-trimming cutter any nearer to the breast of the heel, without danger of frequently mutilating the heel. This surplus stock must be removed prior to the edge-setting operation, that is, the finishing operation on the edge of the sole.

I produce a shoe in which, on the right-hand side of the shoe, is shown the condition of the edge of the shank of the sole in front of the heel breast after the edge-trimming operation, while on the left side of the shoe the bunch of the stock in front the heel breast has been removed. The step in the manufacture of shoes which comprises the removal of this surplus stock from the edge of the sole in the shank is known as "jointing". This operation was performed, on the inside of the shoe which I produce, by the

United Company's "Jointing Machine, Goodyear", which was first put into commercial use in November, 1910.

[*Shoe illustrating operation of jointing machine, Goodyear, is introduced in evidence, and marked "Defendants' Exhibit 194".*]

In February, 1899, and always before the introduction of the United Company's jointing machine, this operation was a hand operation and was performed by a hand knife. In this hand operation the operator would run the knife lengthwise of the edge of the shank to sever the surplus stock longitudinally of the sole edge and would then cut off the surplus stock at the heel breast by a cut cross-wise of the sole. The requirements for a satisfactory jointing operation were, first, that the longitudinal cut should be a continuation of the operation of the edge trimmer; that is, that the cut should be made in the same plane as the trimmed edge, and at the same angle to the bottom of the sole as the cut made by the edge trimmer. And, secondly, that the transverse cut should be made in the plane of the heel breast.

As to the first requirement the face of the edge which is left after the surplus stock is removed must be just like the edge left by the edge-trimming machine in front of this cut, because otherwise the edge-finishing iron used in the edge-setting operation would not fit at this point and the edge setting at this point would not be properly performed. Unless unusual pains were taken by the hand workman in jointing, these requirements for satisfactory work were not met so that a good edge-finishing operation would be performed.

Early in 1905 the United Company undertook to develop a machine for performing this operation, and after several years of experimenting and trying out of several experimental machines in shoe factories, a successful machine was finally produced and, as stated, was put into commercial use in November, 1910. Prior to that date a number of machines had been constructed as shown in patent No. 1,030,605, June 25, 1912, Perry (application filed February 9, 1910), and had been used in shoe factories, but that use was of an experimental nature and the machine was not regarded as a commercial success until it had been reorganized and con-

structed substantially as shown in patent No. 1,047,982, December 24, 1912, Perry (application filed April 29, 1911). The reorganized machine shown in the drawings and set forth in the claims of that patent No. 1,047,982 was adapted as a standard commercial machine in November, 1910.

The first problem which had to be solved in the production of this machine was the making of the longitudinal cut and the transverse cut in such manner that the paths of the cutting knives should intersect, to insure that the surplus stock should be severed completely from the shoe, and this had to be done in such manner that neither cut should extend beyond the point of intersection of the two cuts, as that would deface the shoe. Further, the longitudinal cut must, as already explained, be a continuation of the cut made in the edge-trimming operation; that is, it must be in the same plane as the plane of the trimmed edge of which it is a continuation. These requirements were met in the commercial machine by providing two reciprocating knives. The knife which formed the longitudinal cut in continuation of the work of the edge-trimming cutter has a contour which is the same as that of the shank cutter on the edge-trimming machine. The cut made by this knife is about a quarter of an inch long and the other knife which reciprocates in a plane parallel to the breast of the heel cuts to a line intersecting the cut made by the first knife at the end of that cut. In the operation of the machine the edge of the shank is presented for the action of the cutters at the point where the edge-trimming operation left off and the shoe is moved quickly to transfer the point of operation of the cutters to the plane of the heel breast, when the operation is completed. The second problem which had to be dealt with in developing this machine was the insuring of proper protection of other parts of the shoe, particularly the heel and the upper of the shoe, from injury by the cutters. This problem was met in the commercial machine without interfering at all with the operation of the cutters. The third problem which had to be met in the production of a machine for performing this hand operation was to produce a machine which manufacturers could afford to use in preference to the inexpensive hand operation. This

problem was met by the general organization of the machine providing for convenient and quick operation and by providing two sets of trimming mechanisms arranged close together, one set comprising cutters shaped and arranged to perform the operation on the right side of the shoe, and the other, cutters shaped and arranged to perform the operation on the left side of the shoe, so that practically all that the operator in changing from one side to the other had to do was to turn the shoe over.

In the commercial use of this machine it was found that it had a capacity of considerably over twice the number of shoes which could be operated upon by a hand workman. The organization by which the problems which I have discussed were solved is set forth in nearly all of the seventy-five claims of patent No. 1,030,605, June 25, 1912, Perry (application filed February 10, 1910), of which the following claims are typical:—

“1. In a machine of the class described the combination with means for trimming the edge of a shoe sole to the line of the heel breast, of additional means operating at the same presentation of the shoe to the machine to detach the trimmed material from the sole in a line with said heel breast.

“2. In a machine of the class described, the combination with means for trimming the edge of a shoe sole to the line of the heel breast, of means for positioning the shoe for the operation of said trimming means, and means for detaching the trimmed material from the sole edge in a line with said heel breast while the shoe is positioned by said positioning means.”

“21. An edge trimming machine comprising a trimming knife having right and left edges, right and left chopping knives co-operating respectively with said right and left edges, said chopping knives each being arranged to move in a path transverse to that of its co-operating trimming edge and means for moving said trimming knife to cause its edges to move alternately to their respective lines of intersection with the paths of the chopping knives.”

“60. In a trimming machine, the combination of a cutter arranged to trim that portion of the sole edge between the heel breast and the point in the shank at which the usual machine trimming operation is stopped, means for driving the cutter, and means for protecting the other parts of the shoe during the trimming operation from injury by said cutter, but permitting the cutter to trim to the heel breast.”

The organization of the machine which enabled the operator to remove the knives from the machine, sharpen them, and return them to the machine without disturbing the adjustments of the knives, which were necessarily delicate for the reasons which I have explained in detail, is defined in all of the nineteen claims of patent No. 1,047,982, December 24, 1912, Perry, of which claim 6 is typical :—

"6. A machine of the class described comprising, in combination, a plurality of knives, connected holders for said knives, mechanism for driving said holders and means for retaining said holders in operative relationship to said driving mechanism constructed to permit the holders to be removed readily from the driving mechanism while retaining their connection with each other undisturbed."

In August, 1911, important improvements were incorporated in the machine. It had been found that occasionally a heel would be damaged in the operation of the machine if the operator were careless. The liability of such injury was obviated by the improvements defined in two of the claims of patent No. 1,048,196, December 24, 1912, Moody (application filed November 18, 1907). A typical claim is the fifth :—

"5. In a machine for cutting in shoe shanks, a knife for trimming along the edge of a shoe sole adjacent to the heel breast, a second knife for curring off the trimmed material substantially in line with the heel breast, means for operating said knives, and a stop positioned to engage the breast of the heel to limit the movement of the shoe relatively to said knives, said stop being adjustable relatively to said knives."

As has already been stated, the capacity of this machine was more than twice the number of shoes which could be jointed by the hand workman, and moreover the quality of the work done by it was always the same and perfect, while the hand workman could perform the operation perfectly only by the taking of unusual pains which would reduce the amount of work which he would do. One hundred and sixty-two machines were put out by the United Company between the time when the machine was introduced in November, 1910, and October 1, 1913. One machine will take care of three or four welters. The demand for this machine has, so far,

been exclusively for the manufacture of welt shoes. This machine is put out by the United Company through its Goodyear department.

**Mr. WEBSTER.** The answer is objected to in that it relates to matter wholly immaterial to the questions involved herein, and as having no reference to matters and in no sense in defence of matters introduced by the petitioner, and for the reasons aforesaid the answer is objected to as incompetent, immaterial and inadmissible.

*Int.* 119. Have you collected under separate cover several Letters Patent referred to by you in your answer to the last question relating to the jointing machine?

*Ans.* Yes, sir, and I produce the volume [*introducing volume of patents*].

[*Volume of patents relating to jointing machines marked "Defendants' Exhibit 195".*]

**Mr. WEBSTER.** The introduction of the patents offered in evidence is objected to for that they were all issued after the date of the filing of the petition herein, and are therefore incompetent, immaterial and inadmissible.

*Int.* 120. Will you state the number, the date and the name of the patentee in each of them?

*Ans.* No. 1,030,605, June 25, 1912, Perry (application filed February 10, 1910).

No. 1,047,982, December 24, 1912, Perry (application filed April 29, 1911).

No. 1,048,196, December 24, 1912, Moody (application filed November 18, 1907).

*Int.* 121. In the list of machines submitted by you in connection with your prior testimony you referred to several eyeletting machines. What is the function of the eyeletting machine in the process of manufacturing boots and shoes? Which of the eyeletting machines referred to by you is the standard machine for regular work? Describe the development of such standard machine since 1899. If it embodies mechanisms which form the subjects-matter of any Letters Patent to the United Company, name the patents.

Mr. WEBSTER. The question is objected to on the ground that it calls for matter not in any sense in reply to, or in defence of, any evidence offered by the petitioner, and is immaterial, irrelevant and inadmissible.

*Ans.* An eyeletting machine is used in the manufacture of shoes to set eyelets in the edges of the "quarters" of lace shoes, both men's and women's.

#### EYELETTING MACHINE: DUPLEX.

At the time of its organization in February, 1899, the United Company had no machine for setting eyelets. Since that time it has developed and supplied to shoe manufacturers several types of eyeletting machines of which the company's standard machine for regular work is the machine known as "Eyeletting Machine, Duplex", which is put out by the company through its eyeletting department. This machine was first put out for commercial use in July, 1902. The organization of the machine as now put out is described in the claims of the following patents: —

- No. 636,175, October 31, 1899, Prime.
- No. 672,056, April 16, 1901, Davey and Ladd.
- No. 683,488, October 1, 1901, Pearson.
- No. 926,903, July 6, 1909, Smith.
- No. 934,066, September 14, 1909, Goddu.
- No. 964,626, July 19, 1910, Dunphy.
- No. 1,013,215, January 2, 1912, Pearson (application filed May 18, 1903).
- No. 1,017,602, February 13, 1912, Smith (application filed June 28, 1910).
- No. 1,023,275, April 16, 1912, Rogers (application filed December 1, 1911).
- No. 1,030,833, June 25, 1912, Rumney (application filed August 8, 1906).
- No. 1,048,840, December 31, 1912, Littlefield (application filed November 2, 1906).
- No. 1,057,068, March 25, 1913, Like (application filed June 28, 1909).

The commercial machine is constructed substantially as shown in the drawings and described in the specifications and claims of Goddu patent No. 934,066, September 14, 1909, although the organization of the present commercial machine embodies improvements shown in the drawings of several of the later patents and set forth in their claims. It should also be noted that some of the features of the organization shown in the Goddu patent No. 934,-066 are more broadly defined in the claims of patent No. 1,013,-215, January 2, 1912, Pearson (application filed May 18, 1903).

This Duplex eyeletting machine was the first and only machine ever used for inserting eyelets in the upper simultaneously on both sides of the lacing slit. Eyeletting machines of the type previously in general use were organized to set one eyelet at a time, and were used, first, to set eyelets one at a time in the upper on one side of the lacing slit, and then to set the eyelets one at a time on the other side of the lacing slit. The Duplex eyeletting machine has a double advantage over that type of single machine in that the quality of its work is superior, since eyelets of each pair in the opposed edges are properly located opposite each other and the capacity of the machine is greater, being over 50 per cent more than that of the single machine.

Referring now to such of the patents as represent most marked steps in the development of the Duplex eyeletting machine, No. 636,175, October 31, 1899, Prime, is the first patent in the industry showing and describing a machine for inserting eyelets simultaneously in the two opposite edges of the upper. Fifteen claims of this patent describe in broad terms the organization of the present commercial machine. Typical claims are 1 and 3 :—

"1. An eyeletting machine comprising suitable mechanism, and means for causing said mechanism to simultaneously set two eyelets in axial alignment in two layers of work, one superimposed upon the other."

"3. An eyeletting machine comprising two oppositely arranged sets, and an anvil disposed between said sets and having its faces formed to co-act therewith."

The machine of the Prime patent was only experimental and was not adapted for commercial use. A substantial step toward a com-

mercial machine is represented by patent No. 683,488, October 1, 1901, Pearson. Important features of the organization of the commercial machine are set forth in thirty-two claims of that patent.

Among the more notable of these features are mechanism for punching the holes in the material which was subsequently to receive the eyelets and the organization for feeding the work between successive eyelet-setting operations. There are many claims in this patent No. 683,488 directed to each of these features, of which claims 1 and 26 are typical:—

“1. In an eyeletting machine, the combination with a pair of punches and a pair of setting dies, of a support therefor, the members of each of said pairs being oppositely disposed, substantially as described.”

“26. An eyeletting machine, having punching devices, two oppositely acting setting dies adapted to feed the work and a die plate co-acting with the setting dies both to set the eyelets and to feed the work, substantially as described.”

The next important step in the development of this machine into commercial form is represented by patent No. 1,013,215, January 2, 1912, Pearson, granted upon an application filed May 18, 1903. The most important contribution to the machine described in the claims of this patent is the organization which enables the machine to adopt itself automatically to differences in the relative thickness of the stock on opposite sides of the lacing slit. Typical claims of this patent defining this organization are claims 21 and 22:—

“21. An eyeletting machine, having, in combination, two oppositely disposed work engaging tools and a self adjusting die block between them, substantially as described.

“22. An eyeletting machine, having, in combination, two oppositely disposed work engaging tools and a movable die block located between them and movable in the line of motion of the tools, substantially as described.”

Fourteen claims of this patent No. 1,013,215 set forth mechanisms always embodied in the commercial machine.

The final step in the production of a satisfactory commercial machine is represented by patent No. 934,066, September 14, 1909, Goddu (application filed April 22, 1903).

Thirty-eight claims of this patent describe mechanisms always embodied in the commercial machine. It will perhaps be sufficient to quote only a typical claim :—

“ 34. An eyeletting machine, having, in combination, oppositely disposed eyelet sets, edge guides, and means for varying the positions of the edge guides during the operation of the machine, substantially as described.”

Mechanism set forth in the claims of this patent, of which the quoted claim is typical, first provided the machine with means for adjusting its operation to vary the distance of the eyelets from the respective edges of the stock while the machine was running, thus enabling the operator to get the desired contour of the line of eyelets with relation to the edge of the stock. This improvement is particularly useful when the machine is eyeletting uppers of high-grade shoes, other than oxfords and bluchers, in most of which it is desired to set the eyelets at the lower end of the line of eyelets at a greater distance from the lacing slit than the eyelets above. Further improvements, some of which are incorporated in all commercial machines and others of which adapt the machine for special kinds of work, are shown and described in patents of later date than those which I have discussed, or it is anticipated will be the subjects-matter of patents yet to be granted.

Twelve hundred and nineteen Duplex eyeletting machines were in use in shoe factories on October 1, 1913. The average capacity of the Duplex eyeletting machine is 2500 pairs per day. One machine will set the eyelets of shoes which are to be welted on six or seven welt and turn sewing machines.

This Duplex eyeletting machine is put out by the United Company through its eyeletting department.

Mr. WEBSTER. The answer is objected to for that it relates wholly to matter that is immaterial, inadmissible and irrelevant and is in no sense in reply to, or in defence of, any evidence submitted by the petitioner before the examiner, and all reference to patents or mechanisms of patents or structures not shown in claims of patents issued prior to the filing of the petition herein is especially objected to as incompetent, inadmissible and irrelevant and as having no bearing on the questions involved herein.

*Int.* 122. Have you collected under a single cover the several Letters Patent referred to by you in your last answer as relating to the Duplex eyeletting machine?

*Ans.* I have, and I produce the volume.

[*Volume of patents relating to Duplex eyeletting machine as introduced in evidence, and marked "Defendants' Exhibit 196".*]

Mr. WEBSTER. The introduction of the patents offered in evidence is objected to as inadmissible, irrelevant and incompetent, and the introduction of all patents issued after the date of the filing of the petition herein is especially objected to as having no reference in any manner to the question involved herein.

*Int.* 123. Will you please give the number, date and name of patentee of the several patents contained in the volume which has just been offered in evidence as Defendants' Exhibit 196?

*Ans.* No. 636,175, October 31, 1899, Prime.

No. 672,056, April 16, 1901, Davey and Ladd.

No. 683,488, October 1, 1901, Pearson.

No. 926,903, July 6, 1909, Smith.

No. 934,066, September 14, 1909, Goddu.

No. 964,626, July 19, 1910, Dunphy.

No. 1,013,215, January 2, 1912, Pearson (application filed May 18, 1903).

No. 1,023,275, April 16, 1912, Rogers (application filed December 1, 1911).

No. 1,030,833, June 25, 1912, Rumney (application filed August 8, 1906).

No. 1,048,840, December 31, 1912, Littlefield (application filed November 2, 1906).

No. 1,057,068, March 25, 1913, Like (application filed June 28, 1909).

*Int.* 124. In the list of machines heretofore submitted by you, you refer to blacking machine, model A, crest heel, and blacking machine, model B, crest heel. What is the function performed by these machines in the process of making shoes, and what has been the development of this art since 1899? If the United Company is putting out any standard machine for this pur-

pose which embodies any mechanisms forming the subjects-matter of Letters Patent of the United Company, refer to such patents.

Mr. WEBSTER. Question objected to because it calls for statements with reference to matter not referred to in any evidence submitted by the petitioner before the examiner, and is utterly immaterial, inadmissible and irrelevant with reference to the issues involved herein.

*Ans.* Before the heel-burnishing operation, that is, the final finishing operation on the heel, blacking must be applied to the edges of the heels of black shoes, and russet stain to the edges of the heels of russet shoes. The two machines inquired about, blacking machine, model A, crest heel, and blacking machine, model B, crest heel, are two differently organized machines which have been produced by the United Shoe Machinery Company for performing this operation. The present standard commercial machine is the model B machine.

#### BLACKING MACHINE — MODEL A : CREST HEEL.

At the time the United Company was formed, in February, 1899, the universal practice was to apply blacking or stain to heels with a hand brush, and it was one of the most inexpensive operations in the manufacture of shoes, as the work was always done by a boy or girl. The quality of the work was not satisfactory, however, as the blacking or stain was frequently splashed on the upper or on the tread face or breast edge of the heel. The great problem in devising a machine for performing this hand operation was, therefore, the producing of a machine which would meet the low labor cost of the hand operation by doing this work in a superior way and by doing a great deal more of it. The United Company produced a machine which met these conditions and which was first put out for commercial use in September, 1908, the machine then put out now being known as "Blackening Machine, Model A, Crest Heel." This machine comprised two rotary brushes so located that they applied blacking simultaneously to opposite sides of a heel. Each brush was especially constructed for both getting blacking into the rand crease, that is, the crease between the upper and the

upper edge of the sole above the heel, and spreading blacking on the body of the heel edge. Means were provided in the machine to prevent getting blacking upon the upper, and to avoid getting blacking upon the breast of the heel the brushes were rotated in opposite directions, both toward the breast of the heel. The machine was so organized that a boy or girl running it could not get blacking upon the upper or on the breast of the heel, and was so rapid in its operation that its average capacity was at least double that of the hand operation. The organization of this model A machine is defined in the claims of the following patents :—

- No. 805,763, November 28, 1905, Tuttle.  
No. 1,007,777, November 7, 1911, Furber.  
No. 1,015,433, January 23, 1912, Furber (application filed July 29, 1910).  
No. 1,056,454, March 18, 1913, Rollins (application filed September 12, 1907).

Referring to typical claims of these patents, claims 6 and 11 of patent No. 805,763 are as follows :—

"6. A machine of the class described, comprising a pair of rotary brushes arranged to act upon opposite sides of a heel, combined with a work rest arranged relatively to said brushes to be engaged by the heel when presented to either brush."

"11. A machine for finishing parts of boots and shoes, comprising a plurality of rotary work members having yielding peripheries and mounted with their acting peripheral faces adjacent and arranged to permit the heel of a boot or shoe to be advanced curved end foremost between them, said work members being rotatable in directions to cause the movement of their acting faces to be from said curved end toward the breast of the heel."

Representative claims of patent No. 1,056,454 are the 14th and 21st :—

"14. In a machine of the character described, the combination of a tank adapted to contain liquid material, a pair of brushes mounted to rotate on vertical axes side by side, means for simultaneously rotating said brushes, and means for lifting the liquid material out of said tank and applying same to each of the brushes."

"21. A heel blacking machine comprising, in combination, two rotary brushes for applying blacking arranged side by side and spaced apart to permit the partial introduction of a heel between

them, means for delivering blacking to said brushes and devices associated with said two brushes but additional to their working faces to locate the heel laterally between the brushes."

Twenty claims of this patent No. 1,056,454 set forth the organization of the model A machine.

In patent No. 1,007,777, Furber, which shows substantially the commercial machine, and describes the machine in thirty-three of its claims, typical claims are the following :—

"23. A heel blacking machine, having, in combination, a heel blacking brush comprising a thin section having short stiff bristles and tapered from its upper edge downwardly for forcing the blacking into the rand crease, and a thick section of soft bristles for wiping blacking upon the edge of the heel, and means for actuating the brush."

"41. A heel blacking machine, having, in combination, two rotary brushes for applying blacking to the opposite edges of a heel, means for adjusting said brushes from and toward each other into definite relations to act simultaneously upon opposite sides of heels of different widths, and a common driving means for rotating the brushes in their adjusted positions."

Between the date of its introduction in September, 1908, and March 1, 1913, the end of the company's last fiscal year, 173 of these machines were put out. The model A machine has a capacity of from 3600 to 4200 pairs per day, and a boy can black on the machine at least double the number of shoes that he can black by hand.

#### BLACKING MACHINE — MODEL B: CREST HEEL.

The model A machine proved acceptable for the lower-priced shoes, but it was not satisfactory for the better grades of shoes because it was found that the average boy operator could not be relied upon so to operate the machine that it would spread the blacking uniformly, and the machine therefore frequently put too much blacking in the rand crease and too much on the rear end of the heel. The machine was, however, used on the higher grades of work as well as upon the cheaper grades, and manufacturers of all grades of shoes would probably have continued to use it had they not been supplied with a more satisfactory machine. Soon after the model A machine had been put into commercial use the

United Company had started experimental work with a view to producing a machine which would apply blacking uniformly to all parts of the heel edge and on the rand, and which would eliminate the danger of imperfect work being caused by the carelessness of a boy operator. This experimental work resulted in the production of a radically new heel-blacking machine of an entirely different type, known as "Model B". This machine, which was first put into commercial use in May, 1911, is shown as it was then constructed in patent No. 1,025,523, May 7, 1912, Furber (application filed December 31, 1910).

[*Adjourned to 10 o'clock A. M., October 23, 1913.*]

BOSTON, MASS., October 27, 1913.

[*Ans. to Int. 124 continued:*]

This machine differs radically from the model A machine in that the blacking-applying brush moves across the heel from the top of the heel adjacent to the upper to the tread face of the heel, while the two brushes of the model A machine moved longitudinally of the heel and the shoe. This mode of operation of the model B machine insures the application of a uniform film of blacking all over the heel. A further important feature of the organization of this new model B machine is that one shape of brush is equally satisfactory on all the usual shapes of heels, while in the earlier model A machine brushes adapted for one shape of heel were not suited for heels of radically different shape.

The organization of this model B machine, including features to which I have not specifically referred, is defined in nearly all of the forty-five claims of patent No. 1,025,523, May 7, 1912 (granted on an application filed December 31, 1910, Furber). Of these claims the following are typical: —

"1. A machine of the class described comprising in combination, means movable across the heel edge to apply blacking thereto and additional means operating simultaneously therewith for applying blacking to the rand crease."

"9. A machine of the class described comprising in combination a rotary rand crease guide, means for supplying blacking to the rand engaging face of said guide and a rotatable brush arranged to take blacking from said guide and deliver it to the work."

"42. A machine of the class described comprising in combination, a brush mounted for operative movement, means for driving the brush, means for supplying blacking to the brush, and guiding means to engage the shoe during the blacking operation, said guiding means being so positioned with relation to the brush that the brush will move across the lifts of the shoe heel toward the tread face of the heel."

Some of the features of the organization of the model B machine were adopted from the model A machine and are set forth in general terms in some of the claims of patent No. 1,007,777, November 7, 1911, Furber. Typical claims directed to this feature are the following:—

"4. A machine of the class described having, in combination, means for blacking the rand crease of a shoe and means for blacking the edge of the heel, and means for supplying coloring material directly to the crease blacking means and indirectly to the edge blacking means."

"15. A heel blacking machine having, in combination, a blacking brush, means to actuate the brush, and means to straighten the bristles of the brush as it is actuated."

Since this model B machine was first put into commercial use it has been further improved, and it is expected that additional patent protection will be obtained upon these improvements.

Between May, 1911, and September, 1, 1913, one hundred and eighteen of these model B heel-blacking machines were put out. The average output of the machine is about 3000 pairs per day, which is over sixty per cent more than the average number of shoes which a hand workman will black in a day. The work done by this model B machine is so superior to the work of the earlier model A machine that the model B machine will probably entirely supersede the model A machine.

These two machines, blacking machine, model A, crest heel, and blacking machine, model B, crest heel, are put out by the United Company through its general department.

Mr. WEBSTER. The answer is objected to for that it relates to matters in no wise at issue or involved in the issues of this cause, and for the further reason that the answer relates to matters in reference to which no evidence has been submitted by the petitioner,

and said answer is not in reply to, or in defence of, any evidence submitted before the examiner; and for said reason the answer is objected to as inadmissible, irrelevant and incompetent.

The answer, in so far as it relates to patents or mechanisms of patents issued since the date of the filing of the petition herein, is objected to for the reasons aforesaid.

*Int.* 125. Have you collected under a single cover patents referred to by you in your last answer as relating to heel-blacking machines?

*Ans.* I have, and I produce the volume.

[*Volume of patents relating to heel-blacking machines is introduced in evidence, and marked "Defendants' Exhibit 197".*]

Mr. WEBSTER. The introduction of the patents offered in evidence is objected to as incompetent, inadmissible and immaterial, and all patents issued after the date of the filing of the petition herein are especially objected to as having no reference to matters involved herein.

*Int.* 126. Please give the number, date and name of patentee of each of the patents in the volume which has been offered in evidence as Defendants' Exhibit 197.

*Ans.* No. 805,763, November 28, 1905, Tuttle.

No. 1,007,777, November 7, 1911, Furber.

No. 1,015,433, January 23, 1912, Furber (application filed July 29, 1910).

No. 1,025,523, May 7, 1912, Furber (application filed December 31, 1910).

No. 1,056,454, March 18, 1913, Rollins (application filed September 12, 1907).

*Int.* 127. In the list of machines submitted by you in answer to a previous question (question No. 7), you referred to a machine designated as repairing machine, model A, patent leather. Please state what the function of that machine is in the manufacture of shoes, how such function was performed prior to 1899, and also state what improvements, if any, have been made by the United Company in this art since 1899, and their importance in the art. If such improvements form the subjects-matter of Letters Patent of the United Company, state the patents.

Mr. WEBSTER. Question objected to for that it calls for matters having no bearing on the questions involved in this cause, and for the further reason that it calls for matter in no sense in reply to, or in defence of, matters presented by the petitioner before the examiner.

The petitioner also objects to all reference to patents or structures shown in patents issued after the date of the filing of the petition herein, and for the reasons aforesaid said question is objected to as incompetent, inadmissible and immaterial.

#### REPAIRING MACHINE — MODEL A : PATENT LEATHER.

*Ans.* The machine inquired about, "Repairing Machine, Patent Leather", is used in the repairing of patent leather shoes before they are shipped from shoe factories to be marketed.

A large proportion of patent leather shoes, from a minimum of about forty per cent of shoes made of the better grades of patent leather to a maximum of over seventy per cent of shoes made from the cheaper grades of patent leather, have to be repaired after the making operation, before they can be marketed. Until quite recently this operation of repairing patent leather shoes was always done by hand. The necessity for the operation is due to the cracking in the patent leather which occurs during the lasting operation. This cracking is chiefly caused by the strain to which the leather is subjected in lasting it around the curved toe, so that most of the repairing has to be done on the toe tip, although occasional cracks occur in other parts of the upper which have to be repaired. These damaged portions must all be repaired before the shoe can be marketed, and in all factories making patent leather shoes a regular operation is that of patent leather repairing. A patent leather shoe which requires repairing before it could be marketed is shown in Defendants' Exhibit No. 13, and the patent leather shoes of Defendants' Exhibits Nos. 149 and 182 will obviously need repairing after the making operations are completed.

In this repairing operation enamel is first buffed off in the region of the cracks, as illustrated on the left portion of the toe tip in Defendants' Exhibit No. 13, and then liquid enamel must be applied

to the buffed portion. The application of this liquid enamel was so essentially a hand operation that it was done by putting the enamel on a soft cloth wrapped about the fingers of the workman, and rubbing it into the leather. Several coats of the enamel had to be applied to each buffed spot.

Probably no minor operation upon the shoe ever presented so difficult a problem for inventors as the devising of a machine for performing this hand operation properly and in such manner that it would effect a saving for the manufacturer to use the machine. The first problem was to devise a tool which would take the place of the operator's fingers and the soft cloth, and which, like them, would fit the curved surfaces around the toe and would also act satisfactorily in the crease between the welt and upper. The second problem was to devise means for operating this tool which again would take the place of the operator's fingers. The United Company's inventors in their experimental work soon found that a tool which had a reciprocating motion would rub the enamel off the spot to which it was the object of the operation to apply enamel, while a tool having a rotary motion would throw the enamel away from the centre of its revolution. The third problem was to meet the condition presented by the hand workman using each portion of the cloth until that portion had absorbed so much enamel that its surface was unfit for further use, and finally, after the entire cloth was thus rendered unfit for further use, throwing it away and taking another piece.

Over two years of constant experimenting were required before a machine was produced which was satisfactory for commercial use, and during this period several different machines were built and were discarded as useless. Early in 1911 a machine was produced which solved all of the problems to which I have referred. In this machine the yielding character of the finger rubbing was produced by a spongy rubber tool. The cloth was provided in the form of an endless piece over a yard long, the necessary rubbing motion was obtained by imparting to the tool a very rapid movement approximately in the form of a figure eight, and moving the cloth as each successive portion of the cloth was unfit for further

use was provided for by making the tool in the form of a large roll, over and from which the cloth was stretched to another roll which supported and held it taut, and on which it was moved by means which, at the touch of a finger, would move the cloth just far enough to bring a new, fresh part of the cloth into operative position.

As already stated, the first machine which would perform this operation satisfactorily was produced early in 1911. As is the company's usual practice, this machine was given an extended trying out in a number of different factories under different commercial conditions, and was finally adopted as a commercial success in the summer of 1911, and manufacture of machines for commercial use was then begun.

No patent has as yet been granted upon this machine, but its organization is set forth in many allowed claims of a pending application for patent filed November 21, 1911. Improvements upon the machine shown in that application and defined in allowed claims are set forth in the claims of another pending application.

This machine, repairing machine, patent leather, is put out by the United Company through its general department. One hundred and fifteen machines were put out during the first year of its commercial use. The quality of the work done by the machine is superior to hand work, and it has an increased capacity over hand work of from a minimum of seventy-five per cent to a maximum of over 200 per cent, according to the quality of the shoes and the conditions under which the work is done. On an average, a saving of about one cent per pair is made in using the machine over hand work. In one factory operators are repairing at least 200 pairs per day on the machine, and in that factory where there are four machines each machine when running to its capacity is effecting a saving for the manufacturer of two dollars per day, or eight dollars for the four machines.

**Mr. WEBSTER.** Answer objected to for that it relates to matters in no wise involved in the issues in this cause, and further for the reason that reference is made in the answer to structures not shown in patents issued prior to the filing of the petition herein.

Further, the answer is objected to for the reason that it is not in

any sense in reply to, or in defence of, any evidence submitted by the petitioner before the examiner; and for the reasons aforesaid the answer is objected to as incompetent, inadmissible and irrelevant.

*Int.* 128. In answer to a prior question (question No. 7), you submitted a list of some of the important machines put out by the United Company, giving the official name of the machine, the date when it was first put out and the department of the United Shoe Machinery Company through which it was put out. In answer to previous questions you have already described a number of these machines and compared the mechanisms embodied therein with the subjects-matter of Letters Patent of the United Company. Will you please state the function in the shoe manufacturing art of the machines on that list to which you have not specifically referred, and if such machines have formed, or now form, the subjects-matter of Letters Patent of the United Company, state the patents.

**Mr. WEBSTER.** Question objected to for that it calls for matter in no way competent with reference to the issues involved in this cause, and in no wise in reply to, or in defence of, any evidence submitted before the examiner by the petitioner.

And for the reasons aforesaid the question is objected to as calling for matter which is inadmissible, incompetent and irrelevant.

#### ASSEMBLING MACHINE : REX TURN SHOE.

##### Pulling Over Department.

*Ans.* This is a machine used for inserting the tacks used in assembling, and sometimes used in lasting the sides of turn shoes, some of which tacks must be fully driven while others must be left with their heads projecting different distances. The machine is organized to provide by an instantaneous adjustment the desired depth of insertion for any tack or series of tacks. The machine was adopted in February, 1912. This machine is set forth in the claims of the following patents and pending applications, owned by the United Company :—

Patent No. 1,026,067, May 14, 1912, Ashton (application filed November 30, 1908).

One application for patent filed prior to December 12, 1911.

One application for patent filed since December 12, 1911.

**BEADING MACHINE: COLUMBIA.**

**General Department.**

This machine is used to turn inside out, and then to pound flat, the seam by which the upper and lining are fastened together wrong side out. The machine was adopted in 1907. This machine is set forth in the claims of the following patents owned by the United Company:—

Patent No. 623,872, April 25, 1899, Booth.

Patent No. 624,426, May 2, 1899, Booth.

Patent No. 1,027,411, May 28, 1912, Flynt (application filed December 14, 1908).

**BEVELING MACHINE — MODEL B: CHAMPION STRIP.**

**General Department.**

This machine is used to cut leather board into strips and to split the strips diagonally from corner to corner, preparatory to dieing out wedge heel lifts. It was first put out by the United Company in November, 1909, and is set forth in the claims of the following patents owned by the United Company:—

Patent No. 1,025,556, May 7, 1912, Winter (application filed June 3, 1908).

Patent No. 1,048,278, December 24, 1912, Benjamin (application filed April 7, 1911).

**BUILDING MACHINE — PYRAMID HEEL: MODELS B, C, D.**

**General Department.**

In the use of this machine heel lifts, either pieced or whole, are placed one upon another to produce a heel of the desired height, and the machine automatically aligns them and nails them together. The machine was first put out in June, 1909, and embodies mechanisms set forth in the claims of the following patent, and an application owned by the United Company:—

Patent No. 1,056,720, March 18, 1913, Tripp (application filed June 9, 1909).

One application for patent filed prior to December 12, 1911.

**CEMENTING MACHINE : HUB LINING — MODELS E AND F.**  
General Department.

This machine is used to apply cement to doubling material which is inserted between the upper and the lining to strengthen the upper. The machine was adopted in 1908 and constitutes the subjects-matter of applications owned by the United Company as follows:—

One application for patent filed prior to December 12, 1911.

One application for patent filed since December 12, 1911.

**CEMENTING MACHINE — MODEL X: STANBON CHANNEL.**  
General Department.

This machine is used to apply cement to the channel and channel flap of an out-sole preparatory to laying the flap over the stitches by which the sole is attached to the insole and upper. It is particularly adapted for McKay soles having wide channels. The machine was adopted in April, 1911, and its organization is set forth in the claims of a patent owned by the United Company:—

Patent No. 1,004,705, October 3, 1911, Stanbon.

**CEMENTING MACHINE — STAR CHANNEL: MODELS A AND C.**  
General Department.

This machine is used to apply cement to the channel and channel flap preparatory to laying the flap over the stitches by which the out-sole is attached to the upper. It was adopted in October, 1906, and is described in the claims of the following patents owned by the United Company:—

Patent No. 743,929, November 10, 1903, Rollins.

Patent No. 1,013,735, January 2, 1912, Brogan (application filed November 19, 1908).

Patent No. 1,030,769, June 25, 1912, Brogan (application filed October 27, 1906).

**CEMENTING MACHINE — STAR CHANNEL : MODEL D.  
General Department.**

This machine is used to apply cement to the channel and channel flap of the sole preparatory to laying the flap over the stitches by which the sole is attached to the upper. The machine is particularly designed for operating on McKay soles having wide channels. It was adopted in April, 1912, and embodies mechanisms set forth in the claims of patents owned by the United Company as follows : —

Patent No. 743,929, November 10, 1903, Rollins.

Patent No. 1,004,705, October 3, 1911, Stanbon.

Patent No. 1,013,735, January 2, 1912, Brogan (application filed November 19, 1908).

Patent No. 1,030,769, June 25, 1912, Brogan (application filed October 27, 1906).

**CLINCH MACHINE — UNIVERSAL DOUBLE.**

**Metallic Department.**

This machine is used to secure the out-sole of a metallic fastened shoe to the insole by means of a wire fastening which is clinched at both ends. The machine was first put out in November, 1899, and is defined in the claims of the following patents owned by the United Company : —

Patent No. 611,990, October 4, 1898, Casgrain.

Patent No. 669,023, February 26, 1901, Casgrain.

Patent No. 693,686, February 18, 1902, Casgrain.

Patent No. 765,650, July 19, 1904, Casgrain.

Patent No. 891,907, June 30, 1908, Casgrain.

Patent No. 1,030,971, July 2, 1912, Casgrain (application filed January 31, 1910).

The shoe which is produced by the operation of this machine and the fastening which is inserted by the machine, as well as the methods practiced by the use of the machine, are defined in the claims of the following patents owned by the United Company : —

Patent No. 669,022, February 26, 1901, Casgrain.

Patent No. 669,025, February 26, 1901, Casgrain.

Patent No. 669,026, February 26, 1901, Casgrain.

Patent No. 721,016, February 17, 1903, Casgrain.

Patent No. 724,432, April 7, 1903, Casgrain.

**CUTTING AND SCORING MACHINE — INSOLE : MODELS D AND E.**  
General Department.

This machine is used to cut the ends of the lip of a welt insole, before the lip is turned up by the lip-turning machine. At the same time the machine also marks the insole, so as to guide the operators in sewing the inseam on the welt-sewing machine and in butting the welt; and simultaneously with these two operations the machine stamps the size number upon the insole and makes a mark to guide the operator in applying canvas if the insole is to be reinforced. The machine was adopted as a standard commercial machine in December, 1911. There was no machine for doing this work in 1899. The organization of the machine is set forth in the following patents and applications for patents owned by the United Company: —

Patent No. 957,598, May 10, 1910, Cook.

Patent No. 1,033,764, July 23, 1912, Mirandette (application filed February 1, 1911).

Two applications for patents filed prior to December 12, 1911.

**EMBOSSING MACHINE — MODEL B.**  
General Department.

This machine is used for embossing a trademark, the name of the manufacturer or the retailer's name on the inside of the upper of a shoe. The embossing is usually done with gold leaf or bronze powder. The machine was first put out for commercial use in January, 1911, and is defined in the claims of patents and applications owned by the United Company as follows: —

Patent No. 1,028,567, June 4, 1912, Gordon and Topham (application filed December 23, 1903).

One application for patent filed prior to December 12, 1911.

Two applications for patents filed since December 12, 1911.

**EYELETTING MACHINE — CAMEO : FOOT POWER.****Eyeletting Department.**

This is a foot-power machine for inserting eyelets in material previously punched, and it is used for setting odd eyelets and eyelets of special shapes. It was first put out in April, 1910, and constitutes the subject-matter of an application for patent owned by the United Company as follows:—

One application for patent filed prior to December 12, 1911.

**EYELETTING MACHINE — UNIVERSAL.****Eyeletting Department.**

This is a machine for inserting eyelets in shoe uppers, and comprises automatic means for punching holes for the eyelets, inserting the eyelets and feeding the work. It was adopted in November, 1902, and among the patents and applications owned by the United Company which define the organization of this machine are the following:—

Patent No. 603,023, April 26, 1898, Field.

Patent No. 638,994, December 12, 1899, Smith.

Patent No. 672,056, April 16, 1901, Davey et al.

Patent No. 880,376, February 25, 1908, Field.

Patent No. 1,048,840, December 31, 1912, Littlefield (application filed November 2, 1906).

One application for patent filed prior to December 12, 1911.

**FASTENING MACHINE — MODEL D : STAPLE.****Metallic Department.**

This machine makes and drives staples and is used in tacking out-soles to the insoles of light-weight McKay sewed shoes, women's, misses' and children's, to hold them in place until the soles are permanently secured, also for tacking insoles of welt shoes to lasts and for other miscellaneous tacking. The machine was adopted in January, 1907, and has embodied or now embodies mechanisms set forth in the claims of patents owned by the United Company as follows:—

Patent No. 447,681, March 3, 1891, Hamm.

Patent No. 571,227, November 10, 1896, Hamm and Eaton.

Patent No. 765,650, July 19, 1904, Casgrain.

Patent No. 899,093, September 22, 1908, Ashton.

Patent No. 1,016,930, February 13, 1912, Borden (application filed January 16, 1905).

**FINISHING MACHINE — U S M C : BUTTONHOLE.**

**Fitting Room Department.**

This machine is used after buttonholes have been sewed on "Making Machine, Buttonhole", to gather in line both the loose ends of the threads and the stay cord which is used to reinforce the edges of the buttonholes, and then to bind down by blind stitches said ends and cord upon the under face of the buttonhole piece. After experimental work begun some time before December 12, 1911, this machine was adopted in January, 1913. It constitutes the subjects-matter of pending applications owned by the United Company as follows:—

Three applications filed prior to December 12, 1911.

One application filed since December 12, 1911.

**FLEXIBLE INNERSOLE MACHINE — MODEL X : GOODYEAR.**

**Goodyear Department.**

This machine is used to make a welt insole flexible by forming slashes between the lips extending part way through the insole at an angle to its surface, the machine automatically varying the lengths of the slashes according to the distance between the insole lips. The machine was adopted in January, 1911, and is defined in the claims of patents owned by the United Company as follows:—

Patent No. 539,835, May 28, 1895, Tirrell.

Patent No. 871,967, November 26, 1907, Stewart.

Patent No. 871,969, November 26, 1907, Stewart.

Patent No. 958,029, May 17, 1910, Stewart.

The United Company also owns a patent on the insole which is produced by the operation of this machine, which is:—

Patent No. 871,968, November 26, 1907, Stewart.

**FUDGE EDGE MACHINE : GOODYEAR.**

Goodyear Department.

This machine "sets" or burnishes the edge of a shoe sole and simultaneously wheels the upper face of the sole edge to form imitation stitch impressions. It is used on light McKay sewed or turned shoes. A sample of the work of this machine is shown in Defendants' Exhibit 30. The machine was adopted in May, 1908, and is defined in the claims of a patent owned by the United Company as follows:—

Patent No. 852,703, May 7, 1907, Carnes.

**GROOVING AND BEVELING MACHINE — GOODYEAR : POWER WELT.**  
Goodyear Department.

This is a machine for grooving and beveling a strip of welt preparatory to its attachment with the upper to the insole by the welt-sewing machine. The groove is formed to receive the thread of the inseam and the beveling facilitates proper seating of the welt against the upper and insole lip. The machine was first put out in July, 1906, and is defined in the claims of the United Company's patent—

No. 1,020,346, March 12, 1912, Eppler (application filed July 30, 1906).

**LAYING MACHINE — MODEL A : APEX WELT.**  
General Department.

This machine is used to cement a mock welt to the edge of a McKay sole before the sole is attached to the shoe. The machine was adopted for commercial use in February, 1910, and is defined in the claims of the United Company's patent—

No. 1,005,394, October 10, 1911, Winter.

**LAYING MACHINE — MODEL X : APEX WELT.**  
General Department.

This machine lays a McKay welt on a McKay sole and cuts off the welt after it is laid. It was adopted in February, 1911, and its mechanism is set forth in the claims of the United Company's patent—

No. 957,987, May 17, 1910, McLeod.

**LAYING MACHINE — GOODYEAR CHANNEL.**

Goodyear Department.

This machine is used to turn down over the outseam the channel flap of an out-sole after the out-sole has been stitched to the welt. Prior to this operation both flap and channel are cemented on the channel-cementing machine to make the flap stick when it is turned down. The United Company's patents which set forth the mechanisms embodied in this machine are as follows : —

No. 576,114, February 2, 1897, Hadaway.

No. 759,273, May 10, 1904, Hadaway.

No. 981,190, January 10, 1911, Hadaway.

**LAYING MACHINE — GOODYEAR IMPROVED SOLE : MODELS B AND C.**

Goodyear Department.

This is an improved machine for pressing a cemented out-sole with uniform predetermined pressure against the bottom of a welt shoe to hold the out-sole in place while it is being rounded and channeled, and until the out-sole is finally secured to the welt by the out-sole stitching machine.

This machine was adopted in December, 1910, and its organization is defined in the claims of the following patents owned by the United Company : —

No. 694,367, March 4, 1902, Gifford.

No. 930,272, August 3, 1909, Davenport.

No. 942,133, December 7, 1909, Davenport.

No. 1,066,473, July 8, 1913, Davenport (application filed October 10, 1910).

**LAYING MACHINE — GOODYEAR IMPROVED SOLE : TWIN.**

Goodyear Department.

This machine is used to secure an out-sole temporarily to the bottom of a welt shoe by cement to hold the out-sole in place during the rounding and channeling operation and until the out-sole is permanently attached to the welt by the out-sole stitching machine. This machine was adopted and first put out in December,

1906, and is defined in the claims of the following patents owned by the United Company:—

- Patent No. 694,367, March 4, 1902, Gifford.  
Patent No. 781,636, February 7, 1905, Davenport.  
Patent No. 930,272, August 3, 1909, Davenport.  
Patent No. 942,133, December 7, 1909, Davenport.

#### LEVELING AND FLEXING MACHINE — MODEL N : SHIN.

##### General Department.

This machine is used to flatten out "shins" or portions of the hide which come off the legs. The machine scores or cuts the stock on the flesh side and rolls it. The organization of the machine is defined in the United Company's patent—

No. 740,709, October 6, 1903, Stowe.

#### MAKING MACHINE : BUTTONHOLE.

##### Fitting Room Department.

This machine cuts a buttonhole in the upper of a button shoe and sews around its edge with binding stitches which pass over the edge of the material and over a stay cord. After several years of experimenting, begun some time before December 12, 1911, the machine was finally adopted and put out for commercial use on January 1, 1913. The organization of the machine is defined in the claims of patents and pending applications for patents owned by the United Company as follows:—

Patent No. 1,063,729, June 3, 1913, Ray (application filed August 28, 1912).

Patent No. 1,063,795, June 3, 1913, Hill (application filed November 12, 1912).

Patent No. 1,063,880, June 3, 1913, Hill (application filed February 10, 1912).

Two applications filed prior to December 12, 1911.

Three applications filed since December 12, 1911.

#### MARKER : IMPROVED STAR SOLE.

##### General Department.

This is an implement for marking sizes and half sizes on soles

preparatory to sorting them in lots of the same size. It was first put out in October, 1910. The mechanisms embodied in this implement are defined in the claims of patents and a pending application owned by the United Company as follows:—

Patent No. 509,576, November 28, 1893, Gordon.

One pending application for patent filed prior to December 12, 1911.

**MARKING MACHINE — MODEL C: PARAGON VAMP.  
General Department.**

This machine is used to make on the vamp portion of an upper marks which indicate the lines on which the toe tip and blucher quarters should be attached. It also marks the median line of the vamp to facilitate the pulling-over operation. The machine was first put out for commercial use in May, 1906, and its organization is defined in the claims of patents owned by the United Company as follows:—

Patent No. 968,746, August 30, 1910, Davenport.

Patent No. 1,030,275, June 25, 1912, Bayley (application filed April 17, 1906).

**MOLDING MACHINE — AMERICAN TWIN SOLE: MODELS B AND C.  
General Department.**

This machine is used to bend an out-sole before it is attached to a shoe in order to fit it approximately to the bottom of the last. It was adopted in May, 1907, and is defined in the claims of patents and applications owned by the United Company as follows:—

Patent No. 627,122, June 20, 1899, Keighley.

Patent No. 935,212, September 28, 1909, Manent.

Patent No. 997,927, July 11, 1911, Mayo.

Patent No. 1,003,970, September 26, 1911, Ball.

Patent No. 1,003,971, September 26, 1911, Ball.

Patent No. 1,004,075, September 26, 1911, Preble.

Patent No. 1,004,076, September 26, 1911, Preble.

Patent No. 1,048,579, December 31, 1912, Preble (application filed August 8, 1910).

Two pending applications for patents, both filed prior to December 12, 1911.

**MOLDING MACHINE : GOODYEAR POWER.**

**Goodyear Department.**

This machine is used to bend down the margin of a thick-edged turn sole, before it is put on the last, so that it will clear the needle of the turn-sewing machine while the upper is being attached. This machine was adopted in June, 1910, and constitutes the subject-matter of a pending application owned by the United Company as follows:—

One application filed prior to December 12, 1911.

**MOLDING MACHINE : STITCH-DOWN UPPER.**

**General Department.**

This machine performs the operation of molding to shape the heel and toe ends of the uppers of that class of stitch-down shoes which have the insoles attached before the uppers are placed upon the lasts. A stitch-down shoe is one in which the lower edge of the upper is turned outwardly, forming a flange to which the outsole is secured. Sandals and some children's shoes are made this way. This machine was first put out for commercial use in November, 1907, and its organization is set forth in patents and pending applications owned by the United Company as follows:—

Patent No. 871,963, November 26, 1907, Stewart.

Patent No. 871,966, November 26, 1907, Stewart.

Patent No. 947,895, February 1, 1910, Engel.

Patent No. 998,682, July 25, 1911, Engel.

Patent No. 1,001,745, August 29, 1911, Engel.

Patent No. 1,027,408, May 28, 1912, Engel (application filed August 5, 1907).

One pending application for patent filed prior to December 12, 1911.

**NURLING MACHINE — MODEL A.**

**Heeling Department.**

This machine is used to make a row of ornamental indentations around the margin of the tread face of a shoe sole. It was adopted

in July, 1901, and is defined in the claims of the United Company's patent No. 768,560, August 23, 1904, Casgrain.

**OPENING MACHINE — MODEL C: APEX CHANNEL.**

**General Department.**

This machine is used to lift and lay back the channel flap on the sole of a McKay sewed shoe, so as to expose the channel for the subsequent stitching and cementing operations. The machine was adopted in July, 1906, and its organization is defined in the claims of patents owned by the United Company as follows:—

Patent No. 1,004,614, October 3, 1911, Winter.

Patent No. 1,007,685, November 7, 1911, Furber.

Patent No. 1,030,630, June 25, 1912, Winter (application filed April 3, 1908).

**PERFORATING MACHINE — MODEL B: ROYAL.**

**General Department.**

This is a machine, operating step by step, which is used to make an ornamental row of perforations along the margin of upper stock and it is particularly adapted for curved work. The machine was first put out for commercial use in October, 1904, and embodies mechanisms set forth in the claims of patents owned by the United Company as follows:—

Patent No. 701,107, May 27, 1902, Treen.

Patent No. 941,704, November 30, 1909, Flynt.

**PERFORATING MACHINE — MODEL M: STANBON.**

**General Department.**

This is a step-by-step machine which is used to make an ornamental row of perforations along the margin of upper stock; it is capable of wider spacing than perforating machine, model B, Royal, and also operates more rapidly along straight edges. This machine was adopted in April, 1911, and is defined in the claims of the United Company's patents as follows:—

Patent No. 640,426, January 2, 1900, Stanbon.

Patent No. 955,711, April 19, 1910, Stanbon.

**PINCER: U S M C, BENCH.**  
General Department.

This is a machine for drawing uppers of assembled shoes forwardly on the last preparatory to presentation of the shoe to the pulling-over machine. The machine was adopted and first put out for commercial use in August, 1911, and is defined in the claims of patents and applications of the United Company as follows:—

Patent No. 1,030,579, June 25, 1912, Gorsuch (application filed November 1, 1910).

One pending application for patent filed prior to December 12, 1911.

**PRICKING MACHINE: PREMIER HEEL.**  
Heeling Department.

This is a power machine for punching holes in high heels to receive and guide the nails which are subsequently driven by the heel-attaching machine, to attach the heel to the shoe. It was adopted in July, 1903, and as now being supplied to manufacturers embodies mechanism defined in claims of the United Company's patent No. 1,057,011, March 25, 1913, Sargent (application filed March 15, 1911).

**PUNCHING MACHINE — MODEL A : ROYAL TIP.**  
General Department.

This is a gang machine, used to make an ornamental row of perforations all at once in the margin of the toe tip. The machine was adopted in May, 1911, and is defined in the claims of the following patents and pending applications:—

Patent No. 783,403, February 21, 1905, Knight.

One pending application filed since December 12, 1911.

**QUILTING MACHINE: SPATTER.**  
Metallic Department.

This machine forms and drives slugs or nails of wire into the out-sole of a shoe, to increase the wearing qualities of a sole. It is used principally upon boys' and children's shoes. The United

Company's patents which define the organization of this machine are the following:—

Patent No. 765,650, July 19, 1904, Casgrain.

Patent No. 1,019,118, March 5, 1912, Ashton (application filed May 16, 1901).

**REDUCING MACHINE — MODEL A: ROTARY FEATHER EDGE AND SHANK.**

General Department.

This machine is used to thin, by beveling, the shank portion of a sole before the sole is attached to a shoe. The machine was first put out in November, 1904, and embodies mechanism defined in the claim of the United Company's patent No. 1,003,981, September 26, 1911, Busell.

**ROUNDING MACHINE: GOODYEAR HEEL SEAT.**

Goodyear Department.

This machine removes the surplus stock from the sole around the heel end of a welt shoe after the sole has been attached to the shoe and leveled. The outline of the heel end of the sole before this operation is indicated by Defendants' Exhibit No. 102. This machine was first adopted in August, 1909, and its organization is defined in patents owned by the United Company as follows:—

Patent No. 613,228, November 1, 1898, Barbour.

Patent No. 1,005,545, October 10, 1911, Heys.

Patent No. 1,005,573, October 10, 1911, Phelan.

Patent No. 1,027,638, May 28, 1912, Allen (application filed August 24, 1908).

Patent No. 1,034,560, August 6, 1912, Allen (application filed July 16, 1909).

**ROUNDING MACHINE: PLANET SOLE — MODELS C AND D.**

General Department.

This machine is used to shape a sole blank according to the contour of a pattern upon which the blank is supported, and it is used for shaping insoles of all kinds of shoes and for shaping out-soles for shoes other than welt. The machine was first put out in

November, 1901, and has embodied, or now embodies, mechanism defined in the claims of patents and pending applications owned by the United Company as follows:—

Patent No. 579,870, March 30, 1897, Hartford.

Patent No. 881,994, March 17, 1908, Allen.

Patent No. 882,009, March 17, 1908, Mayo.

Patent No. 1,048,511, December 31, 1912, Eaton (application filed December 5, 1907).

Two pending applications for patents filed prior to December 12, 1911.

One application for patent filed since December 12, 1911.

**ROUNDING AND RANDING MACHINE : GOODYEAR HEEL SEAT.**

Goodyear Department.

This machine removes the surplus stock from the out-sole around the heel end of the welt shoe, and rands the heel seat, that is, smooths off the projecting edge portion of the sole next to the upper. This machine was adopted and first put out in January, 1913, after several years of experimental work begun some time prior to December 12, 1911, and constitutes the subject-matter of a pending application for patent owned by the United Company as follows:—

One application filed April 4, 1912.

**SANDING MACHINE — MODEL A : TAP AND SOLE.**

Heeling Department.

This machine is used to buff or smooth box toes, counters and insoles. It was adopted in June, 1908, and the patents and pending applications owned by the United Company which define its organization are:—

Patent No. 868,021, October 15, 1907, Scott.

One pending application for patent filed prior to December 12, 1911.

**SCARFING MACHINE — MODEL N: TAP.**

General Department.

This machine is used to form a bevel on the rear edge of "taps"

or "slip soles", which are inserted between the out-sole and insole in the forepart to provide a double sole in the forepart. The machine was adopted in September, 1910, and constitutes the subject-matter of a pending application owned by the United Company:—  
One application filed prior to December 12, 1911.

**SCALLOPING MACHINE — MODEL B : TOP PIECE.**

General Department.

This machine is used to cut an ornamental scallop in the breast edge of a heel. It was adopted in May, 1905, and is defined in the claims of the United Company's patent —

No. 1,030,567, June 25, 1912, Busell (application filed August 8, 1906).

**SCOURING MACHINE — MODEL X : HEEL.**

General Department.

This machine is used to scour the sides of a heel and to smooth or straighten the corners at which the sides and breast meet. The machine was adopted in November, 1911, and is defined in the United Company's patents as follows:—

Patent No. 883,445, March 31, 1908, Bohr.

Patent No. 957,993, May 17, 1910, McLeod.

**SCREW MACHINE : RAPID STANDARD.**

Metallic Department.

This machine screws the end of a double-threaded wire through the out-sole and the insole of coarse shoes to attach the out-sole to the insole, the machine automatically cutting off the screw flush with the outer face of the out-sole as soon as its end has reached the inner face of the insole. These shoes are known as "standard screw shoes".

Among the patents owned by the United Company, the claims of which define the organization of this machine, are the following:—

Patent No. 490,621, January 24, 1893, Goddu.

Patent No. 565,073, August 4, 1896, Goddu.

Patent No. 908,437, January 5, 1909, Ambler.

Patent No. 1,005,921, October 17, 1911, Ambler.

**SCREW MACHINE — MODEL B: RAPID STANDARD.**  
**Metallic Department.**

This machine is an improved model of the rapid standard screw machine, the improvement insuring more accurate measurement of the length of the fastenings according to the thickness of the work, and facilitating the presentation of the work to the machine and the removal of the work. This model was adopted in January, 1912, and it is defined in the claims of patents and pending applications owned by the United Company as follows: —

- Patent No. 565,073, August 4, 1896, Goddu.
- Patent No. 582,579, May 11, 1897, Cutter.
- Patent No. 691,354, January 21, 1902, Casgrain.
- Patent No. 898,435, September 15, 1908, Casgrain.
- Patent No. 908,437, January 5, 1909, Ambler.
- Patent No. 1,005,921, October 17, 1911, Ambler.
- One pending application for patent filed prior to December 12, 1911.

**SKIVING MACHINE — MODEL A: CHAMPION HEEL LIFT.**  
**General Department.**

This machine is used to bevel leather heel lifts to form wedge lifts for use in high-pitched heels. The machine was first put out for commercial use in September, 1907, and is defined in the claims of patents, and of pending applications for patents, owned by the United Company as follows: —

- Patent No. 894,850, August 4, 1908, Nash.
- Two pending applications for patents filed prior to December 12, 1911.

**SKIVING MACHINE — MODEL A: CHAMPION SHANK.**  
**General Department.**

This machine is used to cut out from a die-cut blank a "shoe shank", a stiffening piece which is placed between the insole and the out-sole in the shank portion of a shoe. The machine was adopted in January, 1909, and is defined in the claims of patents and pending applications owned by the United Company as follows: —

Patent No. 894,850, August 4, 1908, Nash.

Three pending applications for patents filed prior to December 12, 1911.

**SKIVING MACHINE : EROS BRAND.**

Heeling Department.

This machine is used to cut from the waste skiving produced by the Monarch skiving and finishing machine a heel rand which is tacked around the edge of the upper portion of a heel to provide a proper seat for the heel portion of the sole. The machine was first put out for commercial use in August, 1906, and is defined in the claim of the United Company's patent —

No. 1,001,073, August 22, 1911, Pope.

**SKIVING MACHINE — PLUMA : MODELS C AND D.**

General Department.

This machine is used to bevel the edge of upper stock preparatory to folding the edge. It is capable of making a wider bevel than can be made by the Amazeen skiving machine, and it can be used on heavier stock. The machine was adopted in April, 1909, and its organization is set forth in the claims of the following patents and pending applications of the United Company : —

Patent No. 632,990, September 12, 1899, Dunham.

Patent No. 650,349, May 22, 1900, Bayley.

Patent No. 1,003,409, September 19, 1911, Alexander.

Patent No. 1,029,176, June 11, 1912, Davenport (application filed December 26, 1911).

Five pending applications for patents filed prior to December 12, 1911.

**SKIVING AND FINISHING MACHINE : MONARCH COUNTER AND  
BOX TOE.**

Heeling Department.

This machine is used to bevel the edges of counter stiffeners and toe stiffeners. It was adopted in January, 1903, and its organization is defined in patents owned by the United Company as follows : —

Patent No. 671,072, April 2, 1901, Scott.

- Patent No. 703,617, July 1, 1902, Scott.  
Patent No. 760,025, May 17, 1904, Scott.  
Patent No. 760,082, May 17, 1904, Scott.  
Patent No. 777,550, December 13, 1904, Scott.  
Patent No. 961,736, June 14, 1910, Scott.  
Patent No. 969,987, September 13, 1910, Scott.  
Patent No. 975,495, November 13, 1910, Bayley and Mayo.

**SKIVING OR RAND SPLITTING MACHINE — MODEL C : APEX TAP.**  
General Department.

This machine is used to cut stock into strips and to split the strips diagonally from corner to corner to make rands and to bevel the rear edges of taps and slit soles which are placed between the forward portion of the insole and the out-sole. The machine was adopted in January, 1908, and its organization is defined in the claims of the United Company's patent.

No. 1,025,556, May 7, 1912, Winter (application filed June 3, 1908).

**SLASHING MACHINE : XX WELT.**  
General Department.

This machine is used to form a series of inclined slits along one edge of a strip of welting so that the welts can be made more readily to conform to the contour of an out-sole for a mock welt shoe, either McKay sewed or metallic fastened. The machine was adopted in February, 1911, and is defined in the claims of the United Company's patents as follows: —

- Patent No. 737,430, August 25, 1903, Lyon.  
Patent No. 745,965, December 1, 1903, Lyon.

**SNIPPING MACHINE : GOODYEAR INSOLE TOE.**  
Goodyear Department.

This machine is used to notch the lip at the toe of a channeled welt insole so that it may more readily be turned up and set by the lip-turning machine. The machine was adopted in May, 1911, and constitutes the subject-matter of a pending application owned by the United Company as follows: —

One pending application for patent filed prior to December 12, 1911.

**SOFTENING MACHINE — TOE : MODELS C AND D.**

**General Department.**

These machines are used to soften and render pliable, by means of steam or moist vapor, toe portions of shoes, preparing them for the toe-lasting operation. The necessity for this operation was created by the development of modern lasts. The first model was adopted in August, 1911. These machines constitute the subjects-matter of pending applications owned by the United Company as follows:—

Five pending applications for patents all filed prior to December 12, 1911.

**SOFTENING MACHINE — TOE : MODEL E.**

**General Department.**

This is another machine used for softening and rendering pliable the toe portions of shoes to prepare them for the lasting operation. This result is obtained by subjecting the toe portions of the shoes to the action of steam or moist vapor which is generated within the machine. This machine, which was adopted in April, 1912, constitutes the subjects-matter of pending applications for patents owned by the United Company as follows:—

Five pending applications for patents all filed prior to December 12, 1911.

**SPLITTING MACHINE — EMPIRE : MODELS C AND D.**

**General Department.**

This machine is used to slit the heel portion of an out-sole either (1) in such manner as to form a pocket to receive a cushion heel lift, or (2) so as to form a flap which may be bent down and fastened to the breast of a high wooden heel. The machine was adopted in September, 1908, and is defined in the claims of patents and pending applications owned by the United Company as follows:—

Patent No. 745,591, December 1, 1903, Furber.

One pending application for patent filed prior to December 12, 1911.

**SPLITTING MACHINE: SUMMIT.****General Department.**

This machine is used to split or "even" soles by removing portions from the flesh side to make the soles of uniform thickness. The machine was first put out for commercial use in April, 1903, and is defined in the claims of the following patent owned by the United Company:—

Patent No. 894,850, August 4, 1908, Nash.

**STAMPING MACHINE — MODEL C: EAGLE SOLE.****General Department.**

This machine is used for impressing the size and width indications on loose soles. It is organized to permit different combinations of indicating marks so that it can be adjusted to mark properly soles of all sizes and widths. The machine was adopted and first put out for commercial use in March, 1910, and is defined in the claims of the United Company's patents and pending applications as follows:—

Patent No. 1,028,567, June 4, 1912, Gordon and Topham (application filed December 23, 1903).

One pending application for patent filed prior to December 12, 1911.

**STAMPING MACHINE — MODEL C: EAGLE UPPER.****General Department.**

This is a machine for impressing size, width, and, if desired, case marking or other identifying indications, on parts of uppers. It is organized to permit of a large number of combinations of indicating marks so that it can be adjusted to stamp any desired combination of as many as a dozen different symbols. The machine was adopted in March, 1910, and its organization is set forth in the claims of the United Company's patents and pending applications for patents as follows:—

Patent No. 1,028,567, June 4, 1912, Gordon and Topham (application filed December 23, 1903).

One pending application for patent filed prior to December 12, 1911.

**STAMPING MACHINE — REGENT : MODELS B AND C.****General Department.**

This is a machine for stamping trademarks or the name of manufacturer or dealer on the sole or welt of a finished shoe. It is constructed to operate in the same manner automatically on any thickness of stock. The machine was adopted and first put out in May, 1903, and its mechanism is defined in the claims of the following patents owned by the United Company:—

Patent No. 1,022,412, April 9, 1912, Gillespie (application filed October 7, 1908).

Patent No. 1,028,567, June 4, 1912, Gordon and Topham (application filed December 23, 1903).

**STICKING MACHINE — MODEL B : SHANK PIECE.****General Department.**

This machine is used to apply adhesive to a "shoe shank", a stiffening piece which is placed between the out-sole and insole in the shank portion of a shoe. The machine was adopted in September, 1911, and is defined in the claims of the United Company's patent —

No. 1,048,527, December 31, 1912, Hadaway (application filed October 3, 1910).

**TACKING MACHINE — MODEL A : GRIP.****Metallic Department.**

This machine makes and drives pointed nails, and is used for attaching the out-sole to the insole of the heaviest standard screw and pegged work, to hold the out-sole in place until it is permanently secured. The point of the nail is clinched upon the inside of the insole. The machine is defined in the claims of the following patents owned by the United Company:—

Patent No. 555,314, February 25, 1896, Flint.

Patent No. 591,658, October 12, 1897, Robinson.

Patent No. 765,650, July 19, 1904, Casgrain.

**TACKING MACHINE — MODEL B: GRIP.****Metallic Department.**

This machine is an improved model of the grip-tacking machine, and is used for the same classes of work as the model A machine except that the model B machine can be used on work requiring a longer nail than can be handled by the model A machine, owing to improvements in the nail-forming and guiding mechanism. This machine was adopted and first put out in 1909, and is defined in the claims of the United Company's patents as follows:—

Patent No. 555,314, February 25, 1896, Flint.

Patent No. 591,658, October 12, 1897, Robinson.

Patent No. 765,650, July 19, 1904, Casgrain.

Patent No. 910,149, January 19, 1909, Perry.

**TACKING MACHINE NO. 1 — U S M C: INSOLE.****Metallic Department.**

This machine, which drives a headed tack, is used to secure the insole of a welt shoe upon the bottom of the last by means of tacks, preparatory to the lasting operation. The machine was adopted in 1910 and forms the subject-matter of—

One pending application filed January 2, 1912.

**TACKING MACHINE : POWER WELT.****Metallic Department.**

This machine is designed and used for tacking a false welt around the margin of the sole of a McKay sewed shoe before the sole is attached to the shoe, and comprises means for supporting and guiding both the sole and the welt. Among the United Company's patents containing claims which define mechanisms embodied in this machine are:—

Patent No. 490,625, January 24, 1893, Goddu.

Patent No. 568,248, September 22, 1896, Goddu.

Patent No. 611,405, September 27, 1898, Casgrain.

**TRIMMING MACHINE : SPRING HEEL.**  
**Heeling Department.**

This machine trims the edges of the heels of spring-heeled shoes, such as are illustrated in Defendants' Exhibit No. 14. The organization of the machine is defined in the United Company's patents as follows:—

Reissue Patent No. 11,770, September 5, 1899, Mayo (original patent No. 609,518, August 23, 1898).

Patent No. 735,546, August 4, 1903, Mayo.

**TRIMMING MACHINE : ULTIMA HEEL.**  
**Goodyear Department.**

This machine is used to trim the edge of a heel of a shoe after the heel has been secured to the shoe, and it gives to the heel edge its final shape. The machine was adopted in December, 1904, and its organization is defined in the claims of patents and pending applications owned by the United Company as follows:—

Patent No. 961,752, June 21, 1910, Busell.

Patent No. 999,050, July 25, 1911, Matthews.

Patent No. 1,049,309, December 31, 1912, Matthews (application filed May 2, 1910).

One pending application for patent filed prior to December 12, 1911).

**TURNING MACHINE: GOODYEAR FOREPART.**  
**Goodyear Department.**

This machine is used to turn right side out the forepart portion of a turn shoe after the sole has been attached on the turn sewing machine, and after the heel portion has been turned by the turning machine, Goodyear heel. The machine was adopted in April, 1901, and is defined in the claims of the United Company's patents as follows:—

Patent No. 706,038, August 5, 1902, Eppler.

Patent No. 1,022,660, April 9, 1912, Dow (application filed March 29, 1911).

**TURNING MACHINE: GOODYEAR HEEL.****Goodyear Department.**

This machine is used to turn right side out the heel portion of a turn shoe after the sole has been sewed to the upper on the turn sewing machine. The machine was adopted in April, 1901, and is defined in the claims of the United Company's patents as follows:

Patent No. 460,526, September 29, 1891, Edgerly.

Patent No. 594,810, November 30, 1897, Ryan.

Patent No. 763,620, June 28, 1904, Meyer.

Patent No. 851,737, April 30, 1907, Eppler.

Patent No. 944,260, December 28, 1909, Eppler.

**TURNING MACHINE: GOODYEAR LIP.****Goodyear Department.**

This machine is used to turn and set the lip of a welt insole before the insole is attached to the last. The organization of this machine is defined in the claims of the following patents owned by the United Company:—

Patent No. 623,306, April 18, 1899, Coupal and Gordon.

Patent No. 635,772, October 31, 1899, Hadaway.

Patent No. 638,010, November 28, 1899, Hadaway.

**TURNING MACHINE: GOODYEAR WELT EDGE.****Goodyear Department.**

This machine prepares the welt of close-edged women's shoes for the wheeling or other finishing operation by turning a portion of the outer edge of the welt upwardly and backwardly over the outseam and smoothing down the stock so turned backwardly to cause it to conceal the stitches of the outseam, which otherwise would appear upon the upper surface of the welt. This machine was adopted and first put out in December, 1909, and its organization is defined in the claims of the following patents owned by the United Company:—

Patent No. 993,543, May 30, 1911, Olson.

Patent No. 1,026,032, May 14, 1912, Hadaway (application filed January 22, 1910).

Patent No. 1,026,033, May 14, 1912, Hadaway and Allen (application filed March 7, 1910).

**WHEELING MACHINE NO. 2 : GOODYEAR IMPRESSION STITCH.  
General Department.**

This machine wheels or makes a series of imitation stitch impressions on the upper projecting marginal surface on the forepart of the sole of a McKay sewed shoe, and on the corresponding surface of the welt of a welt shoe. This machine was adopted by the United Company in June, 1908, and its patents which define in their claims the organization of the machine are as follows:—

Patent No. 584,597, June 15, 1897, Mower.

Patent No. 690,422, January 7, 1902, Hadaway.

Patent No. 784,263, March 7, 1905, Heys.

Patent No. 906,705, December 15, 1908, Hadaway.

Patent No. 958,913, May 24, 1910, Flynt.

**Mr. WEBSTER.** The answer is objected to for the following reasons:—

Because it relates to matters not within the scope of the order for taking of evidence before the examiner.

Because the answer relates in no wise to any of the matters presented by the petitioner before the examiner.

Because the answer relates to matters not involved in the issues in this cause.

Because the answer relates to patents and mechanisms of patents not issued prior to the filing of the petition herein.

Because the answer relates to alleged pending applications and to the mechanisms of such applications.

And for the reasons aforesaid the answer is objected to as incompetent, inadmissible and irrelevant.

*Int.* 128. Have you collected under one or more separate covers the patents referred to by you in your last answer?

*Ans.* I have collected these patents in three volumes, which I now produce.

[*These three volumes are offered in evidence by the defendant, as Defendants' Exhibits, patents mentioned in Mr. Howard's deposition regarding machines on the list put in evidence, which have not been specifically discussed by him in his previous testimony, and the volumes being marked, respectively, "I", "II" and "III". Volume I is now marked "Defendants' Exhibit 198", Volume II is now marked "Defendants' Exhibit 199", and Volume III is now marked "Defendants' Exhibit 200".*]

Mr. WEBSTER. The introduction of the exhibits now offered in evidence is objected to because they relate to matters in no wise presented before the examiner by the petitioner.

Because the exhibits contain patents issued after the filing of the petition herein.

And because the patents comprising the three exhibits relate to matters in no manner involved in the issues in this cause.

*Int.* 129. Will you please state the number, date and name of patentee of the several Letters Patent contained in the three volumes which have just been offered in evidence as Defendants' Exhibits 198, 199 and 200?

*Ans.* DEFENDANTS' EXHIBIT 198.

Patent No. 447,681, March 3, 1891, Hamm.

Patent No. 460,526, September 29, 1891, Edgerly.

Patent No. 490,621, January 24, 1893, Goddu.

Patent No. 490,625, January 24, 1893, Goddu.

Patent No. 509,576, November 28, 1893, Gordon.

Patent No. 539,835, May 28, 1895, Tirrell.

Patent No. 555,314, February 25, 1896, Flint.

Patent No. 565,073, August 4, 1896, Goddu.

Patent No. 568,248, September 22, 1896, Goddu.

Patent No. 571,227, November 10, 1896, Hamm and Eaton.

Patent No. 576,114, February 2, 1897, Hadaway.

Patent No. 579,870, March 30, 1897, Hartford.

Patent No. 582,579, May 11, 1897, Cutter.

Patent No. 584,597, June 15, 1897, Mower.

- Patent No. 591,658, October 12, 1897, Robinson.  
Patent No. 594,810, November 30, 1897, Ryan.  
Patent No. 603,023, April 26, 1898, Field.  
Patent No. 609,518, August 23, 1898, Mayo.  
Reissue patent No. 11,770, September 5, 1899, Mayo (reissue of 609,518).  
Patent No. 611,405, September 27, 1898, Casgrain.  
Patent No. 611,990, October 4, 1898, Casgrain.  
Patent No. 613,228, November 1, 1898, Barbour.  
Patent No. 623,306, April 18, 1899, Coupal and Gordon.  
Patent No. 623,872, April 25, 1899, Booth.  
Patent No. 624,426, May 2, 1899, Booth.  
Patent No. 627,122, June 20, 1899, Keighley.  
Patent No. 632,990, September 12, 1899, Dunham.  
Patent No. 635,772, October 31, 1899, Hadaway.  
Patent No. 638,010, November 28, 1899, Hadaway.  
Patent No. 638,994, December 12, 1899, Smith.  
Patent No. 640,426, January 2, 1900, Stanbon.  
Patent No. 650,349, May 22, 1900, Bayley.  
Patent No. 669,022, February 26, 1901, Casgrain.  
Patent No. 669,023, February 26, 1901, Casgrain.  
Patent No. 669,025, February 26, 1901, Casgrain.  
Patent No. 669,026, February 26, 1901, Casgrain.  
Patent No. 671,072, April 2, 1901, Scott.  
Patent No. 672,056, April 16, 1901, Davey and Ladd.  
Patent No. 690,422, January 7, 1902, Hadaway.  
Patent No. 691,354, January 21, 1902, Casgrain.  
Patent No. 693,686, February 18, 1902, Casgrain.  
Patent No. 694,367, March 4, 1902, Gifford.  
Patent No. 701,107, May 27, 1902, Treen.  
Patent No. 703,617, July 1, 1902, Scott.  
Patent No. 706,038, August 5, 1902, Eppler, Jr.  
Patent No. 721,016, February 17, 1903, Casgrain.  
Patent No. 724,432, April 7, 1903, Casgrain.  
Patent No. 735,546, August 4, 1903, Mayo.  
Patent No. 737,430, August 25, 1903, Lyon.

## DEFENDANTS' EXHIBIT 199.

- Patent No. 740,709, October 6, 1903, Stowe.  
Patent No. 743,929, November 10, 1903, Rollins.  
Patent No. 745,591, December 1, 1903, Furber.  
Patent No. 745,965, December 1, 1903, Lyon.  
Patent No. 759,273, May 10, 1904, Hadaway.  
Patent No. 760,025, May 17, 1904, Scott.  
Patent No. 760,082, May 17, 1904, Scott.  
Patent No. 763,620, June 28, 1904, Meyer.  
Patent No. 765,650, July 19, 1904, Casgrain.  
Patent No. 768,560, August 23, 1904, Casgrain.  
Patent No. 777,550, December 13, 1904, Scott.  
Patent No. 781,636, February 7, 1905, Davenport.  
Patent No. 783,403, February 21, 1905, Knight.  
Patent No. 784,263, March 7, 1905, Heys.  
Patent No. 851,737, April 30, 1907, Eppler, Jr.  
Patent No. 852,703, May 7, 1907, Carnes.  
Patent No. 868,021, October 15, 1907, Scott.  
Patent No. 871,963, November 26, 1907, Stewart.  
Patent No. 871,966, November 26, 1907, Stewart.  
Patent No. 871,967, November 26, 1907, Stewart.  
Patent No. 871,968, November 26, 1907, Stewart.  
Patent No. 871,969, November 26, 1907, Stewart.  
Patent No. 880,376, February 25, 1908, Field.  
Patent No. 881,994, March 17, 1908, Allen.  
Patent No. 882,009, March 17, 1908, Mayo.  
Patent No. 883,445, March 31, 1908, Bohr.  
Patent No. 891,907, June 30, 1908, Casgrain.  
Patent No. 894,850, August 4, 1908, Nash.  
Patent No. 898,435, September 15, 1908, Casgrain.  
Patent No. 899,093, September 22, 1908, Ashton.  
Patent No. 906,705, December 15, 1908, Hadaway.  
Patent No. 908,437, January 5, 1909, Ambler.  
Patent No. 910,147, January 19, 1909, Perry.  
Patent No. 930,272, August 3, 1909, Davenport.

- Patent No. 935,212, September 28, 1909, Manent.  
Patent No. 941,704, November 30, 1909, Flynt.  
Patent No. 942,133, December 7, 1909, Davenport.  
Patent No. 944,260, December 28, 1909, Eppler.  
Patent No. 947,895, February 1, 1910, Engel.  
Patent No. 955,711, April 19, 1910, Stanbon.  
Patent No. 957,598, May 10, 1910, Cook.  
Patent No. 957,987, May 17, 1910, McLeod.  
Patent No. 957,993, May 17, 1910, McLeod.  
Patent No. 958,029, May 17, 1910, Stewart.  
Patent No. 958,913, May 24, 1910, Flynt:  
Patent No. 961,736, June 14, 1910, Scott.  
Patent No. 961,752, June 21, 1910, Busell.  
Patent No. 968,746, August 30, 1910, Davenport.  
Patent No. 969,987, September 13, 1910, Scott.  
Patent No. 975,495, November 13, 1910, Bayley and Mayo.  
Patent No. 981,190, January 10, 1911, Hadaway.  
Patent No. 993,543, May 30, 1911, Olson.

## DEFENDANTS' EXHIBIT 200.

- Patent No. 997,927, July 11, 1911, Mayo.  
Patent No. 998,682, July 25, 1911, Engel.  
Patent No. 990,050, July 15, 1911, Matthews.  
Patent No. 1,001,073, August 22, 1911, Pope.  
Patent No. 1,001,745, August 29, 1911, Engel.  
Patent No. 1,003,409, September 19, 1911, Alexander.  
Patent No. 1,003,970, September 26, 1911, Ball.  
Patent No. 1,003,971, September 26, 1911, Ball.  
Patent No. 1,003,981, September 26, 1911, Busell.  
Patent No. 1,004,614, October 3, 1911, Winter.  
Patent No. 1,004,075, September 26, 1911, Preble.  
Patent No. 1,004,076, September 26, 1911, Preble.  
Patent No. 1,004,705, October 3, 1911, Stanbon.  
Patent No. 1,005,394, October 10, 1911, Winter.  
Patent No. 1,005,545, October 10, 1911, Heys.  
Patent No. 1,005,573, October 10, 1911, Phelan.  
Patent No. 1,005,921, October 17, 1911, Ambler.

Patent No. 1,007,685, November 7, 1911, Furber.

Patent No. 1,013,735, January 2, 1912, Brogan (application filed November 19, 1908).

Patent No. 1,016,930, February 13, 1912, Borden (application filed January 16, 1905).

Patent No. 1,018,069, February 20, 1912, Miller (application filed August 14, 1909).

Patent No. 1,019,118, March 5, 1912, Ashton (application filed May 16, 1901).

Patent No. 1,020,346, March 12, 1912, Eppler (application filed July 30, 1906).

Patent No. 1,022,412, April 9, 1912, Gillespie (application filed October 7, 1908).

Patent No. 1,022,660, April 9, 1912, Dow (application filed March 29, 1911).

Patent No. 1,025,556, May 7, 1912, Winter (application filed June 3, 1908).

Patent No. 1,026,032, May 14, 1912, Hadaway (application filed January 22, 1910).

Patent No. 1,026,033, May 14, 1912, Hadaway and Allen (application filed March 7, 1910).

Patent No. 1,026,067, May 14, 1912, Ashton (application filed November 30, 1908).

Patent No. 1,027,408, May 28, 1912, Engel (application filed August 5, 1907).

Patent No. 1,027,411, May 28, 1912, Flynt (application filed December 14, 1908).

Patent No. 1,027,638, May 28, 1912, Allen (application filed August 24, 1908).

Patent No. 1,028,567, June 4, 1912, Gordon and Topham (application filed December 23, 1903).

Patent No. 1,029,176, June 11, 1912, Davenport (application filed December 26, 1911).

Patent No. 1,030,275, June 25, 1912, Bayley (application filed April 17, 1906).

Patent No. 1,030,567, June 25, 1912, Busell (application filed August 8, 1906).

Patent No. 1,030,579, June 25, 1912, Gorsuch (application filed November 1, 1910).

Patent No. 1,030,630, June 25, 1912, Winter (application filed April 3, 1908).

Patent No. 1,030,769, June 25, 1912, Brogan (application filed October 27, 1906).

Patent No. 1,030,971, July 2, 1912, Casgrain (application filed January 31, 1910).

Patent No. 1,033,764, July 23, 1912, Mirandette (application filed February 1, 1911).

Patent No. 1,034,560, August 6, 1912, Allen (application filed July 16, 1909).

Patent No. 1,048,278, December 24, 1912, Benjamin (application filed April 7, 1911).

Patent No. 1,048,511, December 31, 1912, Eaton (application filed December 5, 1907).

Patent No. 1,048,527, December 31, 1912, Hadaway (application filed October 3, 1910).

Patent No. 1,048,579, December 31, 1912, Preble (application filed August 8, 1910).

Patent No. 1,048,840, December 31, 1912, Littlefield (application filed November 2, 1906).

Patent No. 1,049,309, December 31, 1912, Matthews (application filed May 2, 1910).

Patent No. 1,056,720, March 18, 1913, Tripp (application filed June 9, 1909).

Patent No. 1,057,011, March 25, 1913, Sargent (application filed March 15, 1911).

Patent No. 1,063,729, June 3, 1913, Ray (application filed August 28, 1912).

Patent No. 1,063,795, June 3, 1913, Hill (application filed November 12, 1912).

Patent No. 1,063,880, June 3, 1913, Hill (application filed February 10, 1912).

Patent No. 1,066,473, July 8, 1913, Davenport (application filed October 10, 1910).

*Int. 130.* Did the United Shoe Machinery Company, between 1899 and the filing of the petition in this case, and does it now, furnish shoe manufacturers machines not referred to by you in the list which you have heretofore given which are the subjects-matter of Letters Patent?

Mr. WEBSTER. Question objected to in so far as it calls for matters relating to what the defendant has done since the filing of the petition herein.

*Ans.* Yes, sir; a large number during the period between 1899 and the filing of the petition in this case, and since that time; and during the entire period since February, 1899, new machines have been coming along all the time.

Mr. WEBSTER. Answer objected to in so far as it relates to anything occurring since the date of the filing of the petition herein.

*Int. 131.* You have been questioned with regard to many machines put out by the United Shoe Machinery Company for performing a large number of different and successive operations in the manufacture of shoes. State generally whether and to what extent, if any, the efficiency of the operation of one of these machines in the manufacture of shoes depends on the efficiency of the operation of any of the others in their work on the same shoe, giving such specific illustrations as occur to you.

Mr. WEBSTER. Question objected to for that it calls for matter not within the scope of the order for the taking of testimony before the examiner.

*Ans.* The manufacture of shoes is unique in that a great number of different successive operations are performed by different machines upon the shoe and its several parts. It is essential for the success of the operation of each machine that the shoe come to that machine in the right condition for its operation, and that requires that the operations of machines which have previously been used upon the shoe shall have been performed properly. If such prior operations have not been properly performed, the work of that machine cannot be done right. On the other hand, proper

performance of subsequent operations upon the shoe requires that each machine in turn shall efficiently prepare the shoe for the operation of the next machine to which the shoe is to be presented; and improper operation of any machine in the line may impair the efficiency of the operation of one or many of the machines which are to perform subsequent steps in the manufacture of the shoe. Frequently the combined effects of improper operations of a number of machines will accumulate as the shoe goes through the factory and will result in a poorly made shoe. It quite often happens that when the finished shoe is not right it requires some time to find out what machine is responsible, and frequently it will be found that the poor work is the combined effect of impaired efficiency of several machines which operate successively upon the shoe. It is therefore of the utmost importance that every machine shall be designed with a view to the succeeding machines, and so that it will deal accurately and efficiently with the precise shoe organization that comes to it from the preceding machines; and every machine must be kept in its most efficient and satisfactory condition. That requires incessant and careful supervision of the machines all along the line.

Moreover, it is of great importance that each machine in the line be properly constructed from a mechanical standpoint. If a machine is poorly constructed, for example if some of the operating parts are weak, or if some of the movements given to any of the parts are too abrupt, or if the mechanical organization is not good, so that excessive wear and lost motion with consequent erratic operation results, a machine will frequently be put out of operation by breakage of parts or by necessity for adjustment to make the parts co-operate as they must to perform the machine's work. Every time a machine is put out of operation for any reason, shoes accumulate in front of that machine and there are no shoes for the operation of the machines for performing subsequent steps, so that those succeeding machines and their operators are idle and the whole factory suffers on account of that one disabled machine.

One of the machines which is put at a disadvantage in performing its operations, if prior machine operations on the shoe have

not been satisfactorily performed, is the lasting machine. The lasting machine cannot do its work properly if the operation of the assembling machine was not properly performed. The assembling machine, as explained in my previous testimony, establishes the proper relations of the parts of the shoe at its rear end, and secures them in that relation, the operation of the machine at the rear end of the shoe being illustrated in Defendants' Exhibits 177 and 178.

If one of those parts of the shoe is improperly located by the assembling machine, either the shoe will not be properly lasted or if the lasting machine operator detects the improper results of the assembling machine operation he must take time to remedy its bad work as best he can. A characteristic of the operation of assembling machine, Rex, is that it so performs the assembling operation that the ends of the counter are not forced below the insole, which, unless the machine were especially designed so to operate as to prevent it, would usually occur when the machine forced the rear end of the counter against the end of the insole. If the assembling machine failed to hold up the counter ends, the lasting machine operator would be obliged to reach down between the upper and the lining for the counter ends and pull them up into proper position before he could last the heel end of the shoe.

The success of the operation of the lasting machine is further dependent on the proper operation of the pulling-over machine. If the tip-seam or the lacing slit had not been located right in the operation of the pulling-over machine, as explained in my previous testimony, either the shoe will be lasted with the tip-seam or the lacing slit, or both, improperly located, resulting in a damaged shoe, or at great inconvenience and with loss of time the lasting machine operator must attempt to remedy by hand work the poor work of the pulling-over machine. Again, even if the pulling-over machine does properly locate the tip-seam and the lacing slit, such proper locations may be disturbed during the operation of the lasting machine if the pulling-over machine has not properly stretched the upper; and further, in the shaping of uppers to high-toed lasts, such as have been largely used for the last seven or eight years and are illustrated in Defendants' Exhibit 135 and in

the lasts on which the shoes of Defendants' Exhibits 177 and 180 were lasted, the stretching across the low part behind the high toe must be done chiefly on the pulling-over machine, and if that portion of the upper is not properly stretched in the operation of the pulling-over machine, the improper work of that machine can be remedied during the operation of the lasting machine only with great difficulty, if at all.

Not only is the lasting machine at a disadvantage if the operations of machines previously used on the shoe were not properly performed, but in turn if the operation of the lasting machine is not right the machines which are used subsequently upon the shoe cannot operate efficiently. It is essential to the proper operation of the welt-sewing machine that in the lasting operation the upper be forced into the angle between the channel lip and the feather edge of the insole and closely against the lip, and be secured in that position. If the lasting machine fails to get the upper into that position, the operation of the welt-sewing machine cannot be performed properly and the inseam cannot be made right. The reasons why such improper operation of the lasting machine would prevent effective operation of the welt-sewing machine will be explained later, in discussing the welt-sewing machine. The difficulties in getting the upper into satisfactory lasted position around the toes of modern lasts have been explained in the latter part of that portion of my previous testimony in regard to lasting machine, Chase, and in the earlier part of that portion of my previous testimony relating to lasting machine No. 5. It should be added that unsatisfactory operation of the welt-sewing machine may also be caused by failure of the lasting machine to seat the upper materials properly against the insole channel lip in the rear portion of the shank. The shapes of modern lasts as illustrated in Defendants' Exhibits 136, 137 and 142, have made it difficult for the lasting machine to force the upper materials, including the counter, into proper lasted position on the inside of the shoe in the shank unless the machine is especially adapted for that work.

Poor lasting of a turn shoe also makes the welt and turn sewing machine operate inefficiently in attaching the soles of turned shoes.

As fully explained in my previous testimony in regard to hand-method lasting machines for turned shoes, if the feather edge of the turn sole is curled up during the lasting operation, the needle of the welt and turn sewing machine will frequently strike the curled up feather edge and deface it or spoil it, so that a new sole must be substituted. It is therefore essential to satisfactory and effective operation of the welt and turn sewing machine on turn shoes that the lasting operation be properly performed. The problem of lasting the toes of turned shoes, so as to prepare them properly for the operation of the welt and turn sewing machine, was so serious that, as explained in my previous testimony, the United Company produced a machine particularly designed and exclusively adapted for that work, known as "Lasting Machine, Consolidated Hand Method (Turn Toe)."

Improper lasting on the inside of the shank of a shoe also puts the heel-attaching machine at a disadvantage in the subsequent heel-attaching operation. In that operation on several types of machines the shoe is positioned relatively to the heel by a "band clamp" which embraces the rear end of the shoe. If the counter on the inside is not forced properly against the sides of the last, the band clamp, engaging the ends of the counter, will displace the shoe to one side, so that the heel will be improperly located on the shoe.

It has already been stated that the welt-sewing machine cannot attach the welt and upper to the insole properly if the lasting machine in its operation has failed to force the upper snugly against the insole lip close to the feather edge of the insole, and that there is danger of such poor lasting as will prevent the proper operation of the welt and sewing machine around the toe or at the rear end of the inseam in the shank. Poor lasting at either of these points causes inefficient operation of the welt-sewing machine because the welt-sewing machine cannot make a tight inseam as is required for good shoe making. When the shoe is improperly lasted at these points the welt-sewing machine will either "sew high",—that is, the needle will enter the upper edge portion of the lip at points removed from the feather edge,—or the machine will "sew wide",

that is, while the needle will enter the angle at the base of the lip as it should, it will enter the upper at a point substantially removed from the base of the lip, and the result will be a loose seam. If the machine "sews high", there will be a loose connection of the upper and welt to the insole, there will be an objectionable wide space between the upper and welt of the finished shoe and the inseam stitches will show around the toe; and, further, there is danger that the welt and upper will break away from the insole in the wear of the shoe. If the welt-sewing machine "sews wide", the inseam will be loose and there is danger that the thread will break, and that the shoe will come to pieces.

If the upper-trimming machine, which removes the bunch of excess upper material at the toe which is left after the lasting operation, as shown in Defendants' Exhibits No. 8 and No. 149, does not do its work right, and fails to remove some of the stock, that stock may get in the way of the thread arm or looper of the welt-sewing machine and cause that machine to miss stitches, and it will also make it difficult for the operator to present the shoe in right position for the operation of the welt-sewing machine.

The operation of the tack-pulling machine which pulls the lasting tacks, illustrated in Defendants' Exhibit No. 149, must also be properly performed, because if that machine breaks off some of the lasting tacks those tacks will frequently be struck by the welt needle, causing the needle to damage the stock, as by tearing away a portion of the channel lip, as well as breaking the needle, resulting in considerable expense and loss of the operator's time in replacing needles in the machine and in repairing damaged work.

It has been explained how inefficient operation of the lasting machine will make the welt-sewing machine operate improperly by sewing wide, so that the "welt crease", or the angle formed by the welt and upper, will be displaced outwardly away from the insole lip. This inefficient operation of the lasting machine causing, and followed by, improper operation of the welt-sewing machine, also causes bad results in the operations of the rounding and channeling machine and the out-sole stitching machine. A rounding and channeling machine is so-organized that errors in the

location of the inseam by the welting machine are reproduced in the shaping of the sole and the cutting of the channel on the rounding and channeling machine.

The out-sole stitching machine is caused to operate inefficiently in attaching the out-sole to the welt by improper operation of the lasting machine, of the welt-sewing machine, or of the rounding and channeling machine. If the lasting machine fails to push the upper materials snugly against the channel lip so that the welting machine "sews wide", the needle of the out-sole stitcher will usually cut into the inseam in the shank. This frequently results in the cutting of the inseam and sometimes in the breaking of both the inseam and the outseam so that the shoe will come apart in its wear. If the welting machine "sews high", that is, if the inseam is near the top of the channel lip instead of at its base, the out-sole stitching machine will, in this operation, pull the welt away from the upper so that the inseam stitches will be exposed in the finished shoe. Also if a wide inseam has caused the rounding and channeling machine to shape and channel the sole improperly, the outseam will not be properly located. Further, if the channeling knife on the rounding and channeling machine should not be adjusted for correct operation of that machine on the shank of the sole, the out-sole stitching machine could not operate right, because if the channel were too far from the edge, the out-sole stitcher would cut into the inseam with results similar to those already explained as resulting from too wide an inseam made by the welter, while if the rounding and channeling machine cuts the channel too near the edge of the out-sole in the shank, the needle and the awl holder of the out-sole stitcher would, in its operation in the shank, strike and damage the upper.

The heel-attaching machine is put at a disadvantage, as already explained, by improper lasting on the inside of the shank of a shoe. In the heel-attaching operation on several types of machine the heel is held in predetermined position by the heel holder, and the shoe is positioned relatively to the heel by a "band clamp" which embraces the rear end of the shoe and engages the upper adjacent to the ends of the counter. If the counter is not forced against the

last on the inside of the shoe in the lasting operation, the "band clamp" which occupies a predetermined relation to the heel holder displaces the shoe to one side with relation to the heel, so that the heel is not properly located on the shoe in the heel-attaching operation. The heel-attaching machine may further be prejudiced by inefficient operation of the lasting machine if the counter is forced in further over the insole on one side than the other, which is likely to happen on a lasting machine not adapted for proper operation on modern crooked lasts. The portion of the counter which should be lasted over the insole is skived and is thinner than the body of the counter, and if a portion of the body of the counter is forced over on the insole on one side during the lasting operation it makes the stock thicker on that side than on the other side; consequently, when the heel is attached it will be tilted to one side by the extra thickness on one side of the shoe.

The impairment of the efficiency of the operation of one machine by the failure of machines which have previously operated upon the shoe to do their work right extends all the way through the long line of machines which operate successively upon the shoe, and includes even those machines which perform minor operations. The difficulties which I have specifically discussed are merely illustrations of what may occur throughout the factory.

Mr. WEBSTER. The answer is objected to as largely argumentative and as having reference to matters outside the scope of the order referring the taking of evidence to the examiner, and because it relates to matters in no wise involved or at issue in this cause; and for the reasons aforesaid the answer is objected to as incompetent, inadmissible and irrelevant.

*Int.* 132. In your previous testimony in regard to a number of machines you stated that such machines performed operations which were performed by hand in 1899. Please state, if you know, how many machines now being supplied to shoe manufacturers by the United Shoe Machinery Company perform operations which were performed by hand in 1899. State also when each of such machines, if any, were first put out by the United Company.

Mr. WEBSTER. The question is objected to as calling for matter

not within the scope of the order referring the taking of testimony to the examiner, and because of calling for matter having no reference to the questions involved in this cause.

*Aus.* The United Company is putting out many machines which perform operations that were performed by hand in 1899 or were not performed at all in 1899, either by hand or by machine. On a list which I have before me I have enumerated thirty-nine such machines; but there are very likely more which I did not recall as I prepared this list. The machines on this list, all of which are patented or are subjects-matter of pending applications, are as follows:—

**MACHINES PUT OUT BY UNITED SHOE MACHINERY COMPANY WHICH  
DO WORK ALWAYS DONE BY HAND IN 1899 OR NOT DONE  
AT ALL, EITHER BY HAND OR BY MACHINE, IN 1899.**

Name of Machine.	Department.	First put out by United Shoe Machinery Company.
Assembling Machine: Pulling Over Department Rex	Pulling Over Department	September, 1904
Beating and Slashing Machine: Goodyear Welt	Goodyear Department	November, 1904
Beveling Machine: Goodyear Underwedge	Goodyear Department	Early in 1911
Blacking Machine: Crest Heel	General Department	September, 1908
Buffing Machine: Velvet Box Toe	Heeling Department	January, 1904
Clicking Machine: Ideal	General Department	March, 1908
Clinch Machine: Universal Double	Metallic Department	November, 1899
Eyeletting Machine: Duplex [first machine to set two eyelets on opposite sides of an upper simultaneously]	Eyeletting Department	July, 1902

<b>Embossing Machine :</b>		
Goodyear Heel	Goodyear Department	1910
<b>Gumming Machine : Rex</b>		
Toe [superseded by	Pulling Over Depart-	
Shellacing Machine :	ment	
Rex Box Toe]		October, 1904
<b>Jointing Machine :</b>		
Goodyear	Goodyear Department	November, 1910
<b>Lacing Machine : En-</b>	Fitting Room Depart-	
sign	ment	February, 1906
<b>Lasting Machine : Con-</b>		
solidated Hand Method		
(Turn Heel Seat)	Lasting Department	April, 1906
<b>Lasting Machine : Con-</b>		
solidated Hand Method		
(Turn Toe)	Lasting Department	April, 1906
<b>Lasting Machine : Staple</b>	Lasting Department	1912
<b>Molding Machine : Stitch-</b>		
down Upper	General Department	November, 1907
<b>Nailing Machine : Alpha</b>		
Wood Heel	Heeling Department	September, 1907
<b>Pounding Machine : Rex</b>		
[superseded by Pound-		
ing Machine, Model E,		
Rex]	Pulling Over Depart-	
<b>Pincer : U S M C Bench</b>	ment	1904
<b>Pounding and Beating</b>		
Up Machine — Model	General Department	August, 1911
A : Rex Rotary	Pulling Over Depart-	
<b>Pulling Machine : Good-</b>	ment	
year Insole Tack	Goodyear Department	February, 1909
<b>Pulling-Over Machine :</b>		
Rex	Pulling Over Depart-	
<b>Pulling-Over Machine</b>	ment	September, 1899
Model B: Rex [Pull-		[Experimental]
ing Over and Lasting		
Turn Shoes]	Pulling Over Depart-	
	ment	
		July, 1910

Pulling and Resetting Machine : Goodyear Tack	Goodyear Department	November, 1910
Pulling and Trimming Machine: Insole Tack and Turn Shoe	Goodyear Department	December, 1911
Recessing Machine : Goodyear Underwedge	Goodyear Department	1910
Reducing Machine : Goodyear Out-sole	Goodyear Department	April, 1909
Repairing Machine : Pat- ent leather	General Department	August, 1911
Skiving Machine : Eros Rand	Heeling Department	August, 1906
Skiving Machine : Good- year Shank Welt	Goodyear Department	January, 1904
Softening Machine : Toe	General Department	August, 1911
Stapling Machine : Good- year Upper	Goodyear Department	October, 1910
Stitching Machine : Economy Insole	Goodyear Department	October, 1909
Trimming Machine : Goodyear Insole Heel Seat	Goodyear Department	January, 1911
Trimming Machine : Rex Toe [superseded by Pounding and Trim- ming machine, Rex Rotary]	Pulling Over Depart- ment	October, 1904
Trimming Machine : Rex Upper	Pulling Over Depart- ment	December, 1905
Turning Machine : Good- year Forepart	Goodyear Department	April, 1901
Turning Machine : Good- year Heel	Goodyear Department	April, 1901

Turning Machine: Good-

year Welt Edge      Goodyear Department   December, 1909.

Mr. WEBSTER. The answer is objected to because it relates to matters not within the scope of the order of reference to the examiner, and because it relates to matters not in reply to, or in defence of, any evidence presented by the petitioner and because it relates to a considerable extent to matters and things not limited by the date of the filing of the petition herein; and for the reasons aforesaid the answer is objected to as incompetent, inadmissible and immaterial.

[*Adjourned to Tuesday, October 28, 1913, at 10 A. M.*]

BOSTON, MASS., October 28, 1913.

Mr. PHILLIPS. I desire to state that the witness desires to call attention to certain clerical errors in the printed record of his testimony as taken in open court, and to inquire if there is any objection on the part of counsel for the Government to his calling attention to the errors at this time.

Mr. WEBSTER. Counsel for the Government states that he sees no objection to Mr. Howard's calling attention at this time to the clerical errors referred to.

The WITNESS. In the middle of page 481, fourth line from the end of the answer to interrogatory 46, the words "a fine" should be stricken out.

Page 483, in the fifth line of the answer to interrogatory 55, the comma and dash before "fore-part" should be cancelled and "and" should be inserted.

Page 485, in the first line the first word of the answer should be "A" instead of "The". In the sixth line "to be" should be canceled and "being" substituted. In the fifteenth line cancel "possibly" and substitute "and". In the seventeenth line before "nails" insert "heel attaching".

Page 489, the paragraph beginning in the second line is a duplication of a matter contained in a paragraph at the top of page 485. It is out of place on page 489 and should be canceled. On the same page, in line nine of the answer to interrogatory 82, the sec-

ond word, "heel", should be canceled and "sole" should be substituted.

Page 491, third line, instead of "A standard screw machine is a screw", it should be "A standard screw machine is a machine".

Page 529, in the second and third lines of the answer to interrogatory 260, the expression "in this branch of its business" is surplusage and, to secure clarity, should be canceled.

On page 539, in the fifth line of the answer to interrogatory 301, "for" should be "after".

On page 542, in the seventh line of the answer to interrogatory 316, the word "being" should be "performing".

On page 543, in the third line of the answer to interrogatory 320, "clogging" should be canceled and "crowding" should be substituted.

On page 546, in the fourth line of the answer to interrogatory 332, "fast" should be "fair".

On page 561, it is clear that in the sentence "Mr. Choate. And the awl on the metallic machine makes a straight hole for the needle?" should read: "And the awl on the metallic machine makes a straight hole for the nail?" That is, the word "nail" should be substituted for the word "needle".

On page 562, in the third line of the answer to interrogatory 404, "fresh" should be changed to "flesh".

On page 563, in the third line of the answer to interrogatory 406, "slit" should be "slip". On the same page, in the middle of the page, the sentence "This was a machine usable with the operation with the Gem insole" should read: "This was a machine useful only in preparing the Gem insole."

On page 570, in the fourth line, "that counter" should read "the counter".

On page 574, in the last line, the first word should be "tool" instead of "heel".

On page 575, in the fourth and fifth lines to the answer to interrogatory 441, "patented" should be "intended".

In the seventh line of that answer, in the first line of interrogatory 444, in the answer to interrogatory 444, and in two instances

in the second line of the answer to interrogatory 445, "beating" should be "beading".

On page 581, in the fourth line of the answer to interrogatory 472, "in" should be "on". The same page, in the second line of the answer to interrogatory 474, the word "Emerson" should be "Amazeen".

On page 582, in the third line of the answer to interrogatory 481, "to" after "on" should be canceled.

On page 583, in the second line, before the word "loose" the word "the" should be changed to "a".

On page 586, in the third line of answer to interrogatory 500, a comma and "a" should be inserted after "sole".

On page 595, in the eighth line of the first paragraph, "the" before "heel" should be "a". In the middle of the page, in the fourth and fifth lines of the answer to interrogatory 518, clearness will be secured if the surplus expression "as the shoes had been made before the sole had been sewed" be canceled.

On page 615, in the first line of the answer to cross-interrogatory 622, "two devices" should be "best features".

On page 649, in the first line of the answer to cross-interrogatory 674, a period should be inserted after the word "agency", the following "of" should be canceled, and the next word "all" should begin with a capital. In the next line the word "that" should be canceled.

On page 651, in answer to cross-interrogatory 693, in the fifth and seventh lines thereof, the word "twirl" should be "whirl".

On page 652, in the second line of the answer to cross-interrogatory 696, the word "round" should be "room".

On page 654, the last word in the last line of the answer to cross-interrogatory 714 should be "stitches" instead of "stickers".

On page 667, in the answer to cross-interrogatory 806, the second word "it" should be canceled.

On page 682, in the ninth line of the answer to cross-interrogatory 895, the fifth word should be "used" instead of "done".

On page 706, in the ninth line of the answer to cross-interrogatory 1101, the third word should be "were" instead of "is".

On page 712, in the fifth line of the answer to cross-interrogatory 1151, the word "core" should be "cone".

Mr. PHILLIPS. Counsel for defendants inquires whether or not counsel for petitioner will agree that the printed record may be corrected, so far as practicable, in accordance with the statement just given by the witness.

Mr. WEBSTER. I see no objection in the interest of fairness, why the corrections should not be made.

Mr. PHILLIPS. So far as I am at present advised, this closes my direct examination of this witness, and the witness is offered to counsel for petitioner for cross-examination.

*Cross Examination by ALLEN WEBSTER, Esq., of Counsel for Defendants.*

*Cross-Int.* 133. Mr. Howard, as I understand your previous testimony you have had fifteen years' experience as attorney for the United Company and its predecessor, the McKay Shoe Machinery Company, and that during that time you have given substantially all of your time to an investigation of the art with reference to which you have testified, and have thus become perfectly familiar with the whole art. Am I right in my understanding?

*Ans.* I should not be willing to say that I had devoted all of my time to investigation of the art and certainly could not say that I have become "perfectly familiar with the whole art". My work has required a great deal of investigation of the art, and I believe that I have acquired a considerable familiarity with patents relating to the manufacture of shoes.

*Cross-Int.* 134. You say, in answer to question 1, among other things, that you spent a considerable portion of your time in connection with litigation involving shoe machines and shoe machinery patents. Will you kindly state on the record the names of the various cases you refer to in that portion of your answer?

*Ans.* Among the suits to which I had reference in my answer were a number brought by the Goodyear Shoe Machinery Company against the Eppler Welt Machine Company and, at least, one suit brought by one of the lasting machine companies, I think it was

the McKay & Copeland Lasting Machine Company, against the Goodyear Shoe Machinery Company. Before I left the firm of Fish, Richardson & Storrow, as it was then known, to become connected with the McKay Shoe Machinery Company, I was also engaged on work connected with the proposed infringement suits which the McKay Shoe Machinery Company was proposing to bring, in the name of the trustees of the McKay Metallic Fastening Association, against Louis Goddu, the Goddu sons and the Goddu Sons Metal Fastening Company.

*Cross-Int.* 135. Were any of the cases with which you were connected involving shoe machinery patents entered in court? And if so, kindly give the names of the cases, if it is possible for you to do so.

Mr. FISH. You mean at this time?

Mr. WEBSTER. Were they ever entered?

Mr. FISH. Are you talking about the time that he was connected with my firm, or since?

Mr. WEBSTER. Any time.

*Ans.* As regards the suits to which I referred in my answer to the preceding interrogatory, all of the suits were pending in court except the proposed suit to which I referred against the Goddus and the Goddu Sons Metal Fastening Company. I have not at hand the numbers of the suits, although I should be glad to obtain them if desired.

As regards suits on shoe machinery patents upon which I have been engaged during the period since I first became connected with the McKay Shoe Machinery Company in September, 1898, to the present time, there have been a great many of such suits which have been entered in court and in many of which final decrees have been entered. I have not at hand the data of such suits, although I shall be glad to furnish them if desired.

*Cross-Int.* 136. Can you at the present time give the number, date, title and name of patentee of the patents involved in the litigation referred to by you?

Mr. PHILLIPS. The question is objected to as not pertinent to anything referred to in the direct examination of this witness.

Mr. WEBSTER. Counsel for petitioner respectfully calls attention to the fact that the question goes to the qualification of the witness, also to patents which counsel understands have been referred to in the testimony of the witness.

*Ans.* Among over a hundred patents that have been involved in the litigation with which I have been connected are the following:—

No. 776,823, December 6, 1904, Allen, heel-compressing machine.

No. 530,046, November 27, 1894, Heys, heel-compressing machine.

No. 776,787, December 6, 1904, Leland, heel-compressing machine.

No. 946,591, January 18, 1910, Arnold, sewing machine.

No. 961,200, June 4, 1910, Ashton, vamp-trimming machine.

No. 921,503, May 11, 1909, Bates, machine for cutting out thin sheet material such as upper leather for boots and shoes.

No. 950,986, March 1, 1910, Bates, press.

No. 1,000,957, August 15, 1911, Bates, machine for inserting nails in heels.

No. 461,793, October 20, 1891, Briggs, method of forming chain stitches.

No. 463,982, November 24, 1891, Briggs, rough rounding and channeling machine.

No. 511,263, December 19, 1893, Briggs and Dancel, rough rounding and channeling machine.

No. 601,933, April 5, 1898, Brock, lasting machine.

No. 601,934, April 5, 1898, Brock, lasting machine.

No. 765,650, July 19, 1904, Casgrain, reel.

No. 364,217, June 7, 1887, Coburn, mold for molding heels.

No. 582,579, May 11, 1897, Cutter, nailing machine.

No. 563,471, July 7, 1896, French and Meyer, sole sewing machine.

No. 600,883, March 22, 1898, French and Meyer, sole channeling and trimming machine.

No. 630,339, August 8, 1899, sole trimming and channeling machine.

- No. 552,834, January 7, 1896, Grandy, power lasting machine.  
No. 725,077, April 14, 1903, Hadaway, weltng for welt shoes.  
No. 864,532, August 27, 1907, Hadaway, machine for preparing  
shoes for sewing.  
No. 963,761, July 12, 1910, Hadaway, sole-sewing machine.  
No. 968,555, August 30, 1910, Hadaway, vamp-trimming ma-  
chine.  
No. 627,122, June 20, 1899, Keighley, sole-molding machine.  
No. 524,446, August 14, 1894, Lombard, lasting machine.  
No. 675,783, June 4, 1901, Meloon, guide for shoe-sewing ma-  
chine.  
No. 596,305, December 28, 1897, Pettingill, last support.  
No. 884,524, April 14, 1908, Pope, heel-attaching machine.  
No. 561,608, June 9, 1896, Raymond, heel-attaching machine.  
No. 619,707, February 14, 1899, Raymond, heel-attaching ma-  
chine.  
No. 591,698, October 12, 1897, Robinson, nailing machine.  
No. 781,236, January 31, 1905, Small, top-lifts.  
No. 548,671, October 29, 1895, Streckler, lasting machine.  
No. 834,085, October 23, 1906, Taylor, heels for boots and  
shoes.  
No. 982,550, January 24, 1911, Towle, heel-nailing machines.  
No. 700,279, May 20, 1902, Winkley, welt-sewing machine.

*Cross-Int.* 137. Have you now the data with reference to the litigation with which you were connected; and, if so, will you kindly state what cases you were engaged in involving shoe machinery, giving the name of the case and where the same was entered, that is, in what circuit?

Mr. PHILLIPS. Objected to as improper cross-examination and as having no bearing on the matter touched upon in the direct exam-  
ination of this witness.

*Ans.* Among the several hundred suits on patents relating to  
shoe machinery, with which suits I have been familiar and in con-  
nection with which I have done considerable work, are the follow-  
ing: —

2  
1  
8  
6  
1

2  
6  
8  
2

United Shoe Machinery Company *v.* W. J. Young Machinery Company et al., Equity No. 2118 (27), District of Massachusetts.

United Shoe Machinery Company *v.* Charles W. Bowen, Equity No. 2120 (29), District of Massachusetts.

United Shoe Machinery Company *v.* Peter J. Carroll, Equity No. 2119 (28), District of Massachusetts.

United Shoe Machinery Company *v.* Charles E. Greenman, Equity No. 2051, District of Massachusetts.

United Shoe Machinery Company *v.* Duplessis Independent Shoe Machinery Company, Equity No. 2050, District of Massachusetts.

United Shoe Machinery Company *v.* Thomas G. Plant, Equity No. 775, District of Massachusetts.

United Shoe Machinery Company *v.* Thomas G. Plant Company, Equity No. 208 (old No. 774), District of Massachusetts.

United Shoe Machinery Company *v.* George H. Snow, Equity No. 311, District of Massachusetts.

United Shoe Machinery Company *v.* George H. Snow Company, Equity No. 795 (220), District of Massachusetts.

United Shoe Machinery Company *v.* Thomas G. Plant, Equity No. 766, District of Massachusetts.

United Shoe Machinery Company *v.* Thomas G. Plant Company, Equity No. 767, District of Massachusetts.

United Shoe Machinery Company *v.* E. M. Chesley and William A. Rugg, Equity No. 884 (227), District of Massachusetts.

United Shoe Machinery Company *v.* James M. Caunt, Equity No. 1939, District of Massachusetts.

United Shoe Machinery Company *v.* Harry R. Emery, Equity No. 2006, District of Massachusetts.

United Shoe Machinery Company *v.* Fred J. Thompson, Equity No. 2045, District of Massachusetts.

Consolidated & McKay Lasting Machine Company *v.* Carver Cotton Gin Company, Equity No. 1156, District of Massachusetts.

Consolidated & McKay Lasting Machine Company *v.* Busell Lasting Machine Company, Equity No. 1253, District of Massachusetts.

Consolidated & McKay Lasting Machine Company *v.* Michael Sheehy et al., Equity No. 1251, District of Massachusetts.

Consolidated & McKay Lasting Machine Company v. Ezra H. Stetson et al., Equity No. 1254, District of Massachusetts.

Consolidated & McKay Lasting Machine Company v. Frank H. Torrey, Equity No. 1255, District of Massachusetts.

Consolidated & McKay Lasting Machine Company v. Patrick J. Harney, Equity No. 1252, District of Massachusetts.

Consolidated & McKay Lasting Machine Company v. Seaver Process Lasting Company et al., Equity No. 1167, District of Massachusetts.

United Shoe Machinery Company v. C. E. Greenman, Equity No. 1994 (158), District of Massachusetts.

United Shoe Machinery Company v. E. Bottomley, Equity No. 2007, (168), (148), District of Massachusetts.

United Shoe Machinery Company v. Duplessis Independent Shoe Machinery Company, Ltd., et al., Equity No. 1993 (157), (141), District of Massachusetts.

United Shoe Machinery Company v. George B. Leavitt, Equity No. 2008 (169), (149), District of Massachusetts.

United Shoe Machinery Company v. H. E. Lewis, Equity No. 2004 (166), (146), District of Massachusetts.

United Shoe Machinery Company v. The Wentworth Company, Equity No. (blank), Southern District of Ohio.

United Shoe Machinery Company v. George M. Greene et al., Equity No. 1341, District of Massachusetts.

United Shoe Machinery Company v. Thomas G. Plant, Equity No. 768, District of Massachusetts.

United Shoe Machinery Company v. Thomas G. Plant Company, Equity No. 769, District of Massachusetts.

Goodyear Shoe Machinery Company v. Thomas D. Barry et al., Equity No. 1348, District of Massachusetts.

United Shoe Machinery Company v. Duplessis Shoe Machinery Company, Equity No. 2077 (300), District of Massachusetts.

United Shoe Machinery Company v. E. M. Chesley and William A. Rugg, Equity No. 370, District of Massachusetts.

United Shoe Machinery Company et al. v. Charles E. Greenman, Equity No. 1974, District of Massachusetts.

*United Shoe Machinery Company v. Duplessis Independent Shoe Machinery Company, Ltd., et al.,* Equity No. 1973, District of Massachusetts.

*United Shoe Machinery Company v. Thomas G. Plant,* Equity No. 749, District of Massachusetts.

*United Shoe Machinery Company v. Thomas G. Plant Company,* Equity No. 750, District of Massachusetts.

*United Shoe Machinery Company v. Thomas G. Plant Company,* Equity No. 195 (old No. 755), District of Massachusetts.

*United Shoe Machinery Company v. Charles H. Alden and C. H. Alden Company,* Equity No. 413, District of Massachusetts.

*United Shoe Machinery Company v. Moses N. Arnold and M. N. Arnold Company,* Equity No. 412, District of Massachusetts.

*United Shoe Machinery Company v. Thomas G. Plant,* Equity No. 777, District of Massachusetts.

*United Shoe Machinery Company v. Thomas G. Plant Company,* Equity No. 209 (old No. 776), District of Massachusetts.

*United Shoe Machinery Company v. George H. Snow Company,* Equity No. 796 (221), District of Massachusetts.

*United Shoe Machinery Company v. Bresnahan Shoe Machinery Company et al.,* Equity No. 1772, District of Massachusetts.

*United Shoe Machinery Company v. Thomas G. Plant,* Equity No. 764, District of Massachusetts.

*United Shoe Machinery Company v. Thomas G. Plant Company,* Equity No. 763, District of Massachusetts.

*United Shoe Machinery Company v. The Duplessis Shoe Machinery Company, Ltd. and Richard H. Long,* Equity No. 450 (65), District of Massachusetts.

*United Shoe Machinery Company v. Long Shoe Manufacturing Company and Richard H. Long,* Equity No. 429 (59), District of Massachusetts.

*United Shoe Machinery Company v. Thomas G. Plant,* Equity No. 751, District of Massachusetts.

*United Shoe Machinery Company v. Thomas G. Plant Company,* Equity No. 752, District of Massachusetts.

United Shoe Machinery Company *v.* E. M. Chesley and William A. Rugg, Equity No. 837, District of Massachusetts.

United Shoe Machinery Company *v.* N. W. Kimball et al., Equity No. 1723 (80), (76), District of Massachusetts.

United Shoe Machinery Company *v.* Charles S. Fuller and Fred P. Fuller (Cape Ann Shoe Company), Equity No. 1729 (83), (79), District of Massachusetts.

United Shoe Machinery Company *v.* Thomas G. Plant et al., Equity No. 1113, District of Massachusetts.

United Shoe Machinery Company *v.* N. W. Kimball et al., Equity No. 1688 (69), District of Massachusetts.

United Shoe Machinery Company *v.* J. H. Cross et al., Equity No. 1118, District of Massachusetts.

United Shoe Machinery Company *v.* M. F. Donovan, Equity No. 1119, District of Massachusetts.

United Shoe Machinery Company *v.* E. P. Faunce et al., Equity No. 1115, District of Massachusetts.

United Shoe Machinery Company *v.* R. C. Kellam et al., Equity No. 1114, District of Massachusetts.

United Shoe Machinery Company *v.* A. F. Smith, Equity No. 1116, District of Massachusetts.

United Shoe Machinery Company *v.* Aaron F. Smith et al., Equity No. 1124, District of Massachusetts.

United Shoe Machinery Company *v.* W. W. Williams, Equity No. 1121, District of Massachusetts.

United Shoe Machinery Company *v.* Woodward Manufacturing Company et al., Equity No. 1120, District of Massachusetts.

United Shoe Machinery Company *v.* Kimball, Equity No. (blank), District of New Hampshire.

United Shoe Machinery Company *v.* C. K. Fox, Equity No. 1692 (71), (17), District of Massachusetts.

United Shoe Machinery Company *v.* George W. Herrick, Equity No. 1117 (5), District of Massachusetts.

United Shoe Machinery Company *v.* J. E. Maguire et al., Equity No. 1684 (68), (16), District of Massachusetts.

United Shoe Machinery Company v. Duplessis Shoe Machinery Company, Equity No. 1975 (146), District of Massachusetts.

United Shoe Machinery Company v. C. E. Greenman, Equity No. 1976 (131), District of Massachusetts.

Consolidated & McKay Lasting Machine Company v. Seaver Process Lasting Company, Equity No. 1168, District of Massachusetts.

United Shoe Machinery Company v. Edward M. Chesley and William A. Rugg, Equity No. 836, District of Massachusetts.

United Shoe Machinery Company v. Thomas G. Plant Company, Equity No. 765, District of Massachusetts.

United Shoe Machinery Company v. Edward M. Chesley and William A. Rugg, Equity No. 833, District of Massachusetts.

United Shoe Machinery Company v. Thomas G. Plant, Equity No. 753, District of Massachusetts.

United Shoe Machinery Company v. Thomas G. Plant Company, Equity No. 194 (old No. 754), District of Massachusetts.

M. V. Bresnahan et al. v. United Shoe Machinery Company, Equity No. 362, District of Massachusetts.

Essex Machine Company v. O. A. Miller Treeing Machine Company, Equity No. 813, District of Massachusetts.

*Cross-Int.* 138. As I understand your testimony, you had full and complete charge of all the patent soliciting work of the McKay Shoe Machinery Company and later of the United Shoe Machinery Company; am I correct?

*Ans.* I had entire charge of the patent soliciting of the McKay Shoe Machinery Company, and since the formation of the United Shoe Machinery Company I have had entire charge and sole responsibility for the soliciting of patents relating to machines in all departments other than the Goodyear department. The soliciting of patents on machines in the Goodyear department has been done by the firm of Phillips, Van Everen & Fish under my general supervision.

*Cross-Int.* 139. So that in the course of your employment you became familiar with the art in all branches; is that correct?

*Ans.* That is substantially correct.

*Cross-Int.* 140. And does this include the development of the art with reference to inventions made by parties having no connection with either of your employers, or is it limited to the art as developed through applications by your employers or those interested with them?

*Ans.* The proper discharge of my duties has required that I keep advised of the general development of the art, including inventions made and patented by inventors not in any way connected with the United Shoe Machinery Company or with its predecessor, the McKay Shoe Machinery company.

*Cross-Int.* 141. In your direct testimony you read into the record a list of 149 machines in response to question 7. Do you wish to have it understood that you testified that all of the machines specified in that list are necessary for the successful manufacture of shoes?

*Ans.* I do not recall that I so testified.

*Cross-Int.* 142. Then they are not all necessary to the manufacture of shoes, are they?

Mr. PHILLIPS. The question is objected to as vague and ambiguous.

*Ans.* The machines on that list are all useful in or in connection with the manufacture of shoes. Some of them, of course, are particularly adapted for one type of shoe, as, for example, the welt shoe, the turn shoe, or the McKay sewed shoe; and frequently machines especially adapted for use in the manufacture of one type of shoe are not needed and have no place in the manufacture of other types of shoes.

*Cross-Int.* 143. Now, taking up first machines employed in the manufacture of what is known as the McKay shoe, will you kindly specify what types of machines are necessary for the bottoming of the McKay shoe by machinery?

Mr. PHILLIPS. Counsel for the defendants would like to have counsel for petitioner explain what he means by "types of machines".

Mr. WEBSTER. In view of the suggestion of counsel for defendants I will put the question in this way:—

*Cross-Int.* 144. In the bottoming of a McKay shoe by machinery, is anything more required than the employment of a lasting machine and a McKay sewing machine?

Mr. PHILLIPS. Your question is still ambiguous. Have you any objection to stating what you mean by "anything more"?

Mr. WEBSTER. By the term "anything more" I mean any other machinery.

Mr. PHILLIPS. As I understand the question proposed to the witness, it is stated as follows: "In the bottoming of a McKay shoe by machinery is any other machinery required than a lasting machine and a McKay sewing machine?"

*Ans.* A large number of machines in addition to lasting and McKay sewing machines are used by all manufacturers of McKay shoes in the bottoming room.

*Cross-Int.* 145. Is it not a fact that a considerable number of the 149 machines mentioned by you in answer to direct question 7 relate to the ornamentation or the finishing of shoes?

Mr. PHILLIPS. Question objected to as uncertain and ambiguous.

*Ans.* Some of the machines on the list referred to are used by manufacturers for rendering the shoes made by them marketable, both in the way of rendering the shoes presentable after their numerous handlings in the factory and in the way of rendering them attractive in appearance so that they will be salable and will be pleasing to the wearer.

Mr. WEBSTER. Answer objected to, because not responsive and evasive.

*Cross-Int.* 146. Do you wish the court to understand that you testify that the employment of a blacking or polishing machine adds in any way to the wearing quality of shoes?

Mr. PHILLIPS. Question objected to as referring to no machine enumerated in the list of machines submitted by the witness.

*Ans.* I did not intend to state, and think that I did not state, that the operation of any such machine adds to the wearing quality of the shoe.

*Cross-Int.* 147. Does the employment of a burnishing machine add to the wearing quality of a shoe?

*Ans.* I think not; but it adds materially to the salability of the shoe and to the satisfaction of the wearer of the shoe.

Mr. WEBSTER. All that portion of the answer following the words "I think not" is objected to as non-responsive, and the attention of the witness is respectfully directed to the fact that we are all desirous of shortening the record as much as possible and he is invited to assist by simply answering the questions and stopping.

*Cross-Int.* 148. Does the employment of a beading machine add in any way to the wearing quality of the shoe?

*Ans.* A beading machine is very useful in the manufacture of a shoe, and the work done by it would have to be done by hand at great expense if manufacturers did not have machines for performing the work done by beading machines.

Mr. WEBSTER. Answer objected to as being not responsive, evasive and argumentative, and counsel for petitioner moves that the answer be stricken from the record.

*Cross-Int.* 149. Will you now state whether, in your opinion, the employment of a beading machine in the manufacture of shoes adds in any wise to the wearing quality of the shoe?

*Ans.* I think that it does.

*Cross-Int.* 150. Now, explain how the employment of a beading machine adds to the wearing quality of a shoe.

*Ans.* Every machine which is used in the manufacture of the shoe, and does its work right, probably contributes something to the wear of the shoe. The beading machine, which is used after the upper and lining have been stitched together wrong side out, as is the universal practice, is used in the operation of turning upper and lining right side out and in flattening and setting the seam which unites the lining and upper. If that seam were not properly pressed out and flattened by the beading machine, it would not be as secure and there would be more danger of the seam ripping and the lining and upper coming apart.

*Cross-Int.* 151. I observe in your list of machines "clicking machine"; is it not a fact that this is employed for cutting out uppers only?

*Ans.* That machine is employed in the shoe industry exclusively for cutting out parts of uppers and linings for such parts.

*Cross-Int.* 152. I observe in your list three machines under the heading of "eyeletting machine"; is it not a fact that these are used only for setting eyelets in uppers?

*Ans.* Yes, sir; that is their only use in the shoe industry.

*Cross-Int.* 153. I also note "finishing machine, buttonhole"; does that relate to anything but buttonholes in shoe uppers?

*Ans.* No, sir, so far as the manufacture of shoes is concerned.

*Cross-Int.* 154. I observe in the list "indenting and burnishing machine"; does that relate to anything but ornamenting the shoe?

*Ans.* At the same time that the machine "ornaments" the upper it makes presentable the upper face of the welt, which, up to the time of its operation, presented a rough and unsightly appearance which would prevent its marketability except as a damaged shoe.

*Cross-Int.* 155. Then the machine referred to relates to finishing or ornamenting, does it not?

*Ans.* Yes, sir.

*Cross-Int.* 156. And does the "nurling machine" relate to anything more than ornamentation or finishing?

*Ans.* That is its chief use.

*Cross-Int.* 157. Is it not true that the "perforating machines" mentioned in the list are designed and adapted only for making ornamental operations?

*Ans.* Those machines are used with the purpose of adding to the salability of the shoe and the satisfaction of the wearer by imparting an attractive appearance to the shoe.

*Cross-Int.* 158. Is it not true also that "punching machine" and the "quilting machine" mentioned in the list relate to, and are designed only for, producing ornamentation? Kindly answer the question directly, if possible.

*Ans.* My answer immediately preceding will apply to the punching machine. The quilting machine is used for the purpose of increasing the wear of soles of shoes by inserting a large number of metal "slugs" in the bottoms of soles.

*Cross-Int.* 159. Is it not true that the "sanding machine" mentioned in the list is for finishing only?

*Ans.* No, sir.

*Cross-Int.* 159a. What is it for?

*Ans.* It is used to prepare box toes and counters in such manner that they will not injure the adjacent upper when they occupy their proper positions in the shoe.

*Cross-Int.* 160. Then it is used for the purpose of smoothing, is it?

**Mr. PHILLIPS.** Question objected to, as the witness has already stated what the function of a sanding machine is.

*Ans.* In the operation of the machine, after it has removed rough portions of counters or box toes which might injure the upper, it finally imparts a smooth surface which removes all liability of such injury.

*Cross-Int.* 161. Is the "scalloping machine" mentioned in the list for anything other than ornamentation?

*Ans.* On shoes which are to be operated upon by the scalloping machine it is practicable to use a top-lift having in its portion which is to be removed, in the operation of the scalloping machine, defects or blemishes, which, without the operation of that machine, would render that top-lift unfit for use. For this reason I must answer the question in the affirmative.

*Cross-Int.* 162. Is the "scouring machine" mentioned in the list adapted for anything more than smoothing and finishing the heel?

*Ans.* The operation of the scouring machine is of such importance in the manufacture of a shoe that, undoubtedly, a shoe of the medium or better grades which has not been operated upon by the scouring machine would not be salable.

**Mr. WEBSTER.** Answer objected to as not responsive and evasive, and the attention of the court is respectfully called to the attitude of the witness and his apparent disregard of the request to answer the questions briefly and without comments.

*Cross-Int.* 163. I observe in the list stamping machine, model C, Eagle sole; stamping machine, model C, Eagle upper; stamping machine, Regent, models B and C; is it not a fact that these machines are used only for marking and ornamentation?

*Ans.* No, sir.

*Cross-Int.* 164. Please explain.

*Ans.* The last machine, stamping machine, Regent, is frequently used for ornamenting purposes only, but more generally it is used to stamp the maker's or retailer's name on the shoes. The first two machines named, stamping machine, model C, Eagle sole, and stamping machine, model C, Eagle upper, are used to mark the parts of uppers or soles to facilitate sorting them and getting together, out of many thousands of parts of shoes, those parts which are to be put together in one shoe.

*Cross-Int.* 165. Then the stamping machine, model C, Eagle upper, is a marking machine, is it not?

*Ans.* Yes, sir.

*Cross-Int.* 166. And that is all it is, isn't it?

*Ans.* Yes, sir.

*Cross-Int.* 167. I observe in your direct examination you refer to the various departments of the United Shoe Machinery Company. As these are scattered through the record, I will ask you if you will kindly now state those various departments all together?

*Ans.* The departments through which the United Company does its business are the —

Pulling over department,  
Lasting department,  
Goodyear department,  
Metallic department,  
Heeling department,  
Eyeletting department,  
Fitting room department, and  
General department.

*Cross-Int.* 168. And has the United Company any outside departments, associations, or corporations under its control which handle any of its products?

Mr. PHILLIPS. Question objected to as relating to nothing touched upon in the direct examination of this witness, and counsel for defendant will instruct the witness not to answer the question unless ordered to do so by the court.

*Ans.* Under instructions of counsel, I decline to answer the question.

*Cross-Int.* 169. Are the machines under control of the United Company handled in any other manner than through the several departments you have specified?

Mr. PHILLIPS. The same objection.

*Ans.* Under instruction of counsel, I decline to answer.

Mr. WEBSTER. The attention of the court is respectfully called to the fact that the witness has testified in direct examination that various machines were put out through various departments, and it is respectfully urged that it is within the scope of cross-examination to inquire of the witness whether any of such machines were put out in any other manner.

Mr. PHILLIPS. Counsel for defendants has no objection to the question if limited to machines referred to during the examination of this witness.

[*Question read by stenographer.*.]

Mr. PHILLIPS. The same instructions to the witness by counsel unless the question is modified.

*Ans.* Under instructions of counsel, I decline to answer.

Mr. PHILLIPS. Counsel for defendants instructs the witness to answer the interrogatory in so far as it relates to any machines which have been touched upon in his direct examination.

The WITNESS. As regards all of the machines mentioned by me in my previous testimony, none of them is put out otherwise than by the United Shoe Machinery Company through the department which I named in discussing the machine.

*Cross-Int.* 170. Will you kindly state what you mean by the term "put out"; that is, whether put out on lease, or rent, royalty, sold, or otherwise? And in order to save encumbering the record with interrogatories with reference to each of said machines, I would ask you to state particularly how each machine is "put out", going through the list without further interrogation in reference to the same.

Mr. PHILLIPS. Objected to as relating to nothing touched upon in the direct examination of this witness, and as having no bearing on any matter at issue in this hearing before the examiner, being incompetent, irrelevant and immaterial. As the interrogatory is

understood, it calls for a detailed statement as to each machine referred to by the witness. With this understanding of the interrogatory, I instruct the witness not to answer the question unless ordered to do so by the court. I can see no objection to the witness making a general answer as to machines referred to by him if counsel for petitioner desires to question him on such lines.

*Ans.* Under instructions of counsel, I decline to answer the question.

Mr. WEBSTER. The witness has testified in a manner to tend to show that all of the 149 machines mentioned in the list recited by him are covered by patents, and that they were "put out" by various departments. It is respectfully suggested by counsel for petitioner that it is within the scope of cross-examination to ascertain how such alleged patented things were "put out", whether under lease or otherwise. If counsel objects to the question because it relates to a large number of machines, counsel for petitioner will particularize, but it seems useless to encumber the record in that manner.

Mr. PHILLIPS. It seems perfectly evident that by the expression "put out" the witness means that the machines were placed in the hands of customers, and in his direct examination he touched in no manner upon the details of the contracts under which they were put out, nor is it to be assumed that he has any knowledge of such details, nor do the details of such contracts seem to have any bearing at all on any issue before this examiner. I therefore repeat my instructions to the witness.

Mr. WEBSTER. Counsel for the petitioner reserves the right to present this matter to the court at some convenient time.

*Cross-Int.* 171. You have in your direct testimony made reference in several instances to "minor machines". Will you kindly specify what you mean by that term?

*Ans.* The only machine in connection with which I recall using that expression is "repairing machine, model A, patent leather". I so characterized that operation because the hand operation which that machine superseded was a simple one, performed by girls, and

its object was the remedying of damage which had been done the shoe in the manufacturing operations.

*Cross-Int.* 172. Are there any machines in the remaining 148 machines specified by you which are of more importance and more essential and necessary in the bottoming of shoes than any of the other said 148 machines?

Mr. PHILLIPS. Question objected to as ambiguous, uncertain and vague, and not in any way based upon the direct examination of this witness.

*Ans.* I hesitate to draw any lines between the machines as regards their importance because all of them are so important that manufacturers demand them and use them. I should add, however, that not all of the machines on the list have to do with the bottoming operation.

*Cross-Int.* 173. Will you point out what machines have to do with bottoming operations only?

*Ans.* I should say that the following machines have to do with bottoming operations only: —

Assembling machine, Rex.

Assembling machine, model E, Rex.

Assembling machine, Rex turn shoe.

Assembling spindle.

Beating and slashing machine, Goodyear welt.

Blacking machine, model A, Crest heel.

Blacking machine, model B, Crest heel.

Burnishing machine No. 2, Goodyear impression stitch.

Cementing machine, model X, Stanbon channel.

Cementing machine, Star channel, models A and C.

Cementing machine, Star channel, model D.

Channeling machine, Economy insole.

Channeling machine, Goodyear (insole and turn).

Channeling machine, Goodyear Universal (turn work).

Channeling machine, Goodyear Universal (welt work).

Clinch machine, Universal double.

Cutting and scoring machine, insole, models D and E.

Fastening machine, model D, staple.

Flexible innersole machine, model X, Goodyear.  
Flexible insole machine, Gem.  
Fudge edge machine, Goodyear.  
Grooving and beveling machine, Goodyear power welt.  
Heel-breasting machine, model B, Imperial.  
Indenting and burnishing machine, Goodyear welt.  
Jointing machine, Goodyear.  
Lasting machine, Consolidated hand method.  
Lasting machine, McKay and Copeland.  
Lasting machine, No. 5 U S M C.  
Laying machine, Goodyear channel.  
Laying machine, Goodyear improved sole, models B and C.  
Laying machine, Goodyear improved sole (twin).  
Leveling machine, model A, Atlas.  
Leveling machine, Goodyear automatic sole, models A, B, C.  
Leveling machine, Goodyear welt and turn (turn work).  
Leveling machine, Goodyear welt and turn (welt work).  
Leveling machine, Hercules.  
Loading and attaching machine, McKay automatic heel.  
Loading and attaching machine, model B, McKay automatic heel.  
Lockstitch machine, model K, Goodyear out-sole rapid.  
Lockstitch machine, model M, Goodyear out-sole rapid.  
Molding machine, stitch-down upper.  
Nailing machine, Alpha wood heel.  
Nailing machine, American lightning.  
Nailing machine, loose.  
Nailing machine, Hungarian.  
Nailing machine, No. 2 loose.  
Opening machine, model C, Apex channel.  
Pegging machine, Davey.  
Pincer, U S M C bench.  
Pounding machine, model E, Rex.  
Pounding machine, model C, Rex rotary.  
Pounding and beating-up machine, model A, Rex rotary.  
Pounding and trimming machine, model B, Rex rotary.  
Pricking machine, Premier heel.

Pulling machine, Goodyear insole tack.  
Pulling machine, Goodyear upper tack.  
Pulling and resetting machine, Goodyear tack.  
Pulling and trimming machine, insole tack and turn shoe.  
Pulling-over machine, model A, Rex.  
Pulling-over machine, model B, Rex.  
Pulling-over machine, model C, Rex.  
Reducing machine, Goodyear out-sole channel shank.  
Reinforcing machine, economy insole.  
Rounding machine, Goodyear heel seat.  
Rounding and channeling machine, Goodyear Universal.  
Rounding and channeling machine, model E, Goodyear Universal.  
Rounding and randing machine, Goodyear heel seat.  
Scalloping machine, model B, top piece.  
Scouring machine, model X, heel.  
Screw machine, rapid standard.  
Screw machine, model B, rapid standard.  
Separating machine, Hadaway stitch.  
Shoe machine, Goodyear welt and turn (when equipped for welt work).  
Shoe machine, model G, Goodyear welt and turn (when equipped for welt work).  
Shoe machine, model K, Goodyear welt and turn (when equipped for welt work).  
Skiving machine, Goodyear shank welt.  
Skiving machine, Goodyear universal shank.  
Slugging machine, Universal.  
Snipping machine, Goodyear insole toe.  
Softening machine, toe, models C and D.  
Softening machine, toe, model E.  
Stapling machine, Goodyear upper.  
Stapling machine, model B, Goodyear upper.  
Sticking machine, model B, shank piece.  
Stitching machine, economy insole.  
Tacking machine, model A, grip.

Tacking machine, model B, grip.  
Tacking machine, No. 1 U S M C insole.  
Trimming machine, Goodyear insole heel seat.  
Trimming machine, Goodyear insole heel seat, model B.  
Trimming machine, Goodyear Universal inseam.  
Trimming machine, model B, Rex toe.  
Trimming machine, model A, Rex upper.  
Trimming machine, model H, Rex upper.  
Trimming machine, spring heel.  
Trimming machine, Ultima heel.  
Turning machine, Gem lip.  
Turning machine, Goodyear forepart.  
Turning machine, Goodyear heel.  
Turning machine, Goodyear lip.  
Turning machine, Goodyear welt edge.  
Turning and slashing machine, Goodyear lip.  
Wheeling machine No. 2, Goodyear impression stitch.

*Cross-Int.* 174. I observe that you have now specified 104 machines out of the 149 heretofore mentioned by you, which, as I understand your testimony, 104 machines are used in the bottoming of shoes. Please state whether some of the machines last referred to by you are adapted for use only in connection with welt shoes; and, if so, will you kindly point out what machines are adapted for the bottoming only of welt shoes?

*Ans.* The following machines have to do with bottoming operations on welt shoes only:—

Beating and slashing machine, Goodyear welt.  
Channeling machine, economy insole.  
Channeling machine, Goodyear (insole and turn) (when equipped for insole channeling).  
Channeling machine, Goodyear Universal (welt work).  
Cutting and scoring machine, insole, models D and E.  
Flexible innersole machine, model X, Goodyear.  
Flexible insole machine, Gem.  
Grooving and beveling machine, Goodyear power welt.  
Jointing machine, Goodyear.

Lasting machine, Consolidated hand method (welt).  
Laying machine, Goodyear channel.  
Laying machine, Goodyear improved sole, models B and C.  
Laying machine, Goodyear improved sole twin.  
Leveling machine, Goodyear automatic sole, models A, B, C.  
Leveling machine, Goodyear welt and turn (welt work).  
Lockstitch machine, model K, Goodyear out-sole rapid.  
Lockstitch machine, model M, Goodyear out-sole rapid.  
Pounding machine, model C, Rex rotary.  
Pulling machine, Goodyear insole tack.  
Pulling machine, Goodyear upper tack.  
Pulling and resetting machine, Goodyear tack.  
Reducing machine, Goodyear out-sole channel shank.  
Reinforcing machine, economy insole.  
Rounding machine, Goodyear heel seat.  
Rounding and channeling machine, Goodyear Universal.  
Rounding and channeling machine, model E, Goodyear Universal.  
Rounding and randing machine, Goodyear heel seat.  
Separating machine, Hadaway stitch.  
Shoe Machine, Goodyear welt and turn (when equipped for welt work).  
Shoe machine, model G, Goodyear welt and turn (when equipped for welt work).  
Shoe machine, model K, Goodyear welt and turn (when equipped for welt work).  
Skiving machine, Goodyear shank welt.  
Skiving machine, Goodyear Universal shank.  
Snipping machine, Goodyear insole toe.  
Stapling machine, Goodyear upper.  
Stapling machine, model B, Goodyear upper.  
Stitching machine, Economy insole.  
Trimming machine, Goodyear insole heel seat.  
Trimming machine, Goodyear insole heel seat, model B.  
Trimming machine, Goodyear Universal inseam.  
Trimming machine, model A, Rex upper.

Trimming machine, model H, Rex upper.

Turning machine, Goodyear lip.

Turning machine, Goodyear welt edge.

Turning and slashing machine, Goodyear lip.

*Cross-Int.* 175. You have now enumerated, if I have counted correctly, forty-six out of said 104 machines which are adapted only for bottoming of welt shoes. Will you now kindly specify those that are adapted only for bottoming of McKay sewed shoes?

*Ans.* On a somewhat hurried review of the machines which I have enumerated as having to do with bottoming operations only, I note only one which is adapted for use on McKay sewed shoes only, and that is leveling machine, model A, Atlas. I believe, however, that several other machines are, as a matter of fact, used only on McKay sewed shoes, such as pounding and trimming machine, model B, Rex rotary, and trimming machine, model B, Rex toe.

*Cross-Int.* 176. Will you now kindly specify what machines are adapted for use in bottoming turn shoes only?

*Ans.* Assembling machine, Rex turn shoe.

Channeling machine, Goodyear insole and turn (equipped for turn work).

Channeling machine, Goodyear Universal (turn work).

Lasting machine, Consolidated hand method (turn toe).

Lasting machine, Consolidated hand method (turn heel seat).

Leveling machine, Goodyear welt and turn (turn work).

Molding machine, Goodyear power.

Pounding and beating-up machine, model A, Rex rotary.

Pulling and trimming machine, insole tack and turn shoe.

Pulling-over machine, model B, Rex.

Shoe machine, Goodyear welt and turn (when equipped for turn work).

Shoe machine, model G, Goodyear welt and turn (when equipped for turn work).

Shoe machine, model K, Goodyear welt and turn (when equipped for turn work).

Turning machine, Goodyear forepart.

Turning machine, Goodyear heel.

*Cross-Int.* 177. Are some of the machines you have enumerated as having to do with bottoming operations adapted for both welt bottoming and turn bottoming? If so, will you specify such machines?

*Ans.* Blacking machine, model A, Crest heel.

Blacking machine, model B, Crest heel.

Burnishing machine No. 2, Goodyear impression stitch.

Channeling machine, Goodyear (insole and turn; may be equipped for either work).

Channeling machine, Goodyear Universal (may be equipped for either work).

Heel-breasting machine, model B, Imperial.

Lasting machine, Consolidated hand method (special models for either work).

Loading and attaching machine, model B, McKay automatic heel.

Nailing machine, American lightning.

Nailing machine, loose.

Nailing machine No. 2, loose.

Scalloping machine, model B, top piece.

Scouring machine, model X, heel.

Shoe machine, Goodyear welt and turn (may be equipped for either work).

Shoe machine, model G, Goodyear welt and turn (may be equipped for either work).

Shoe machine, model K, Goodyear welt and turn (may be equipped for either work).

Slugging machine, Universal.

Tacking machine, No. 1 U S M C insole.

Trimming machine, Ultima heel.

*Cross-Int.* 178. Are any of the machines mentioned by you as adapted only for bottoming shoes adapted for bottoming McKay nailed or metallic-fastened shoes?

*Ans.* The following machines, which I have enumerated as having to do with bottoming operations only, are adapted for use in

connection with the bottoming of nailed, standard screwed or pegged shoes :—

- Assembling machine, Rex.
- Assembling machine, model E, Rex.
- Assembling spindle.
- Blacking machine, model A, Crest heel.
- Blacking machine, model B, Crest heel.
- Burnishing machine, No. 2, Goodyear impression stitch.
- Cementing machine, model X, Stanbon channel.
- Cementing machine, Star channel, models A and C.
- Cementing machine, Star channel, model D.
- Clinch machine, Universal double.
- Fastening machine, model D, staple.
- Heel-breasting machine, model B, Imperial.
- Indenting and burnishing machine, Goodyear welt.
- Lasting machine, Consolidated hand method (McKay).
- Lasting machine, McKay & Copeland.
- Leveling machine, Hercules.
- Loading and attaching machine, McKay automatic heel.
- Nailing machine, loose.
- Nailing machine, Hungarian.
- Nailing machine, No. 2 loose.
- Opening machine, model C, Apex channel.
- Pegging machine, Davey.
- Pioneer, U S M C Bench.
- Pounding and trimming machine, model B, Rex rotary.
- Pricking machine, Premier heel.
- Pulling-over machine, model A, Rex.
- Scalloping machine, model B, top piece.
- Scouring machine, model X, heel.
- Screw machine, rapid standard.
- Screw machine, model B, rapid standard.
- Slugging machine, Universal.
- Softening machine, toe, models C and D.
- Softening machine, toe, model E.
- Tacking machine, model A, grip.

Tacking machine, model B, grip.

Trimming machine, Ultima heel.

Wheeling machine No. 2, Goodyear impression stitch.

[*Adjourned to 10 o'clock A. M., Wednesday, October 29, 1913.*]

BOSTON, MASS., October 29, 1913.

*Cross-Int.* 179. Kindly state whether any of the machines set out in the list of 149 machines are adapted only for use in the manufacture of shoes having extension edges, Scotch edges or Baltimore edges; and, if so, will you kindly specify such machines or appliances?

*Ans.* I do not know that any of the machines enumerated on the list produced in answer to interrogatory 7 is adapted only for use in the manufacture of shoes having extension edges, either Scotch edges or Baltimore edges.

*Cross-Int.* 180. Are any of the machines about which you have testified, and in which testimony you have made special reference to the use of such devices or machines in the manufacture of shoes having extension edges, necessary for the production of shoes which do not have extension edges?

Mr. PHILLIPS. Question objected to as vague and ambiguous.

*Ans.* I do not know that any machine is necessary for the production of shoes not having extension edges. Such shoes were made long before there were any shoe machines.

*Cross-Int.* 181. In various portions of your direct testimony you have referred specifically to machines and appliances which, if I understand you, you testify are useful in the manufacture by machinery of shoes having extension edges. Will you now inform the court whether such machines and appliances for the manufacture of shoes by machinery are necessary, in the manufacture of shoes by machinery, which shoes do not have extension edges?

Mr. PHILLIPS. Question objected to as vague, ambiguous and uncertain.

*Ans.* It is the practice in the manufacture of shoes to use the machines which, as explained in my previous testimony, are adapted for use in the manufacture of shoes having extension

edges, both in the manufacture of such shoes and in the manufacture of shoes which do not have extension edges so far as such shoes are made.

Mr. WEBSTER. Answer objected to as not responsive, and evasive.

*Cross-Int.* 182. Have you now answered the question as fully as you are able?

*Ans.* Perhaps I should add that in the use of some of the machines referred to in my preceding answer the mechanism adapting those machines particularly for efficient operation on extension edge shoes would not be operated when the machines were used on shoes not having extension edges, while in other machines the organization enabling those machines to do extension edge work would be operated in a different manner when the work being done by the machine was not extension edge work.

*Cross-Int.* 183. Well, shoes without extension edges were manufactured by machinery many, many years before shoes having extension edges were manufactured by machinery, were they not?

*Ans.* Shoes not having extension edges were manufactured by machinery many years before shoes having extension edges were made by machinery.

*Cross-Int.* 184. In your direct testimony you have made reference to machines and mechanisms adapted for the manufacture of shoes by machinery on "razor toe lasts", such as is shown in Defendants' Exhibit 134. Kindly state whether machines or mechanisms to which you have so referred are necessary for the manufacture of a plain, ordinary shoe, such as, for instance, shown in Defendants' Exhibit 161.

Mr. PHILLIPS. Question objected to as vague and ambiguous.

*Ans.* Defendants' Exhibit 134 was produced by me to illustrate the early steps in the development of modern lasts which began about 1895 and which led to the use of lasts having wide variations in widths and shapes of toes, as illustrated in Defendants' Exhibits 135, 136, 137 and 142. That development in lasts led to general use of so-called "crooked lasts", as distinguished from the nearly straight lasts used until about 1895 and illustrated in

Defendants' Exhibit No. 141. The shoe of Defendants' Exhibit 161 was made upon a modern "crooked last". The improvements to which I have referred in my previous testimony as adapting machines for the changing conditions of 1895 and of the years immediately following, as illustrated in Defendants' Exhibit 134 and in the other exhibits to which I have just referred, better adapted those machines for operating upon shoes such as shown in Defendants' Exhibit 161, and the improvements in older machines and the new machines which have been introduced since the period when lasts like Defendants' Exhibit 134 were used are very useful and are extensively used in the manufacture of shoes made on modern lasts, as was the shoe of Defendants' Exhibit 161.

Mr. WEBSTER. Answer objected to as evasive and not responsive.

*Cross-Int.* 185. Have you now answered the question as fully as you are able?

Mr. PHILLIPS. It is suggested that the question is answered as well as it is possible to answer it in the form in which it is stated.

*Ans.* I endeavored to make my preceding answer clear and responsive. However, I can try again by stating that the operations of the machines in question could be performed by hand, if desired, on a shoe like Defendants' Exhibit No. 161, so that the machines or machinery inquired about are not strictly "necessary" for the production of this shoe.

Mr. WEBSTER. Answer objected to as evasive and not responsive.

*Cross-Int.* 186. Am I correct in understanding that you testify that the last marked "Defendants' Exhibit 131" is what is known as a straight last and is the kind of last that was in use many years prior to 1895?

*Ans.* I believe I have never called the last of Defendants' Exhibit No. 131 a "straight" last. For convenience in comparing it with modern "crooked lasts", I have referred to it as "nearly straight". That last was produced by me as "a last such as was in use in 1893 and 1894".

*Cross-Int.* 187. Will you now state whether lasts like the last marked "Defendants' Exhibit 131" were in use prior to 1893?

*Ans.* Yes, sir; lasts substantially like the last of Defendants' Exhibit 131 were in use prior to 1893.

*Cross-Int.* 188. And for how long prior, so far as you know, or according to your best information?

*Ans.* Lasts having the simple lines and regular formation of the last of Defendants' Exhibit 131 were in use for a long time prior to 1893, although in the earlier years they were even simpler and more symmetrical on the opposite sides than is this last of Defendants' Exhibit 131.

*Cross-Int.* 189. Will you now state what you mean approximately by the term "for a long time prior to 1893"; that is, whether you mean five years, ten years, or twenty years?

*Ans.* I mean the entire period during which machines have been used in the manufacture of shoes.

*Cross-Int.* 190. Now, will you kindly state the period referred to in your last answer during which shoes have been manufactured by machine?

**Mr. PHILLIPS.** Question objected to as relating to nothing touched upon in the direct examination of this witness, and as being vague and ambiguous, it not appearing what machine processes are referred to, whether in the manufacture of the whole shoe or merely parts.

*Ans.* Machines for performing various operations in the manufacture of different kinds of shoes were first produced and used at different times in the nineteenth century. The first machine for attaching soles of McKay shoes was produced in the early sixties. The first commercial pegging machine of which I am aware was also introduced in the sixties, while the first lasting machine which was commercially used was first put into shoe factories in the late sixties. The first commercial machine for attaching the welts and uppers of welt shoes to their insoles was put into commercial use in the seventies. I believe that the first machine for attaching out-soles of welt shoes to their welts was also first used commercially in the seventies.

*Cross-Int.* 191. Now, as I understand you, lasts substantially like the last of Defendants' Exhibit 131 were in use as early as

1885, and that shoes were lasted by machinery over such lasts as early as 1885. Kindly state if I am correct in my understanding.

*Ans.* That statement is substantially correct, qualified, of course, by the explanation made in my preceding answers that as we go back through the period prior to the date when this last was used, that is, 1893 and 1894, we find the lasts increasingly simple and symmetrical on their opposite sides.

*Cross-Int.* 192. In your direct testimony you have made, as I recollect it, special reference to machines adapted for the manufacture of shoes by machinery over razor-toe lasts such as are shown in Defendants' Exhibit 134, and also over lasts known as "bulldog" such as are shown in Defendants' Exhibit 135. Will you now kindly inform the court whether the machines and mechanisms to which you have testified with reference to lasting shoes by machinery over said lasts known as "razor toe" and "bulldog" are necessary in the lasting of shoes over the old type of last, which you say was in use as early as 1885?

Mr. PHILLIPS. Objected to as vague and ambiguous.

*Ans.* Such machines are obviously not necessary in making shoes on lasts like that of Defendants' Exhibit No. 131, since, among other reasons, at the period inquired about, 1885, these machines had not been produced.

*Cross-Int.* 193. In your direct testimony you have frequently made reference to machines as "commercial". Will you kindly explain just what you mean when you refer to a machine as having first become a commercial machine?

*Ans.* When I have stated in my direct testimony that a machine was first put out for commercial use on a given date, I have meant that on that date the machine was first put into a shoe factory for regular use under commercial conditions, after a long period of experimental use of the machine, including, first, a trying out at our Beverly factory, and then experimental use of the machine, or, sometimes, of several of the machines, under differing commercial conditions in various shoe factories, during which period parts of the machine which were found weak and likely to break were strengthened or redesigned, any abrupt or harsh movements in the

operating mechanisms were remedied and such changes were made as were needed to make the machine universal, that is, adapted to all kinds of work for which it was designed.

*Cross-Int.* 194. In your direct testimony you frequently state certain patents are "owned or controlled" by the United Company. Kindly state what you mean by the word "controlled" as distinguished from the word "owned".

*Ans.* The United Company has exclusive licenses under certain patents, and some patents setting forth in their claims mechanisms embodied in the machines of the United Company are owned by other companies in which the United Company has a controlling stock interest. I used the expression "controlled" to include such patents as could not be said strictly to be "owned" by the United Company.

*Cross-Int.* 195. Will you specify what patents are controlled by the United Company because of its controlling a majority interest in such company as is the owner of such patents?

Mr. PHILLIPS. Objected to as having no relation to any matter touched upon in direct examination of this witness, and having no bearing upon any issue before this examiner under the order of the court. The witness is instructed not to answer the question unless ordered to do so by the court.

*Ans.* Under instructions of counsel, I decline to answer.

Mr. WEBSTER. Counsel for the petitioner respectfully calls the attention of the court to the fact that the question of "patents" is before the examiner, and that, in view of the fact that the defendant justifies under patents alleged by it as being its property, it is respectfully submitted that the question is entirely competent.

*Cross-Int.* 196. In your direct testimony you frequently state that a machine "embodies the means set forth in the claim" of a patent. Do you wish to be understood as testifying when using such language that such machine operates in all respects as defined in the claim referred to by you?

Mr. PHILLIPS. I shall have to ask you to be a little more specific and point out the direct testimony of the witness, or the portion of the testimony, in which he has used the language referred to in your question.

Mr. WEBSTER. In response to the request of counsel for defendants, counsel for petitioner calls attention to the phraseology found in the witness' answer on page 2276 of the typewritten record [printed page 2278], reading as follows: "The mechanism set forth in all of the eleven claims of this patent No. 473,870 was embodied in the out-sole rapid lockstitch machine as it was put out by the Goodyear Shoe Machinery Company just prior to February, 1899."

Mr. PHILLIPS. It does not seem to me that the language just quoted justifies the question.

Mr. WEBSTER. Do you object to it and tell him not to answer?

Mr. PHILLIPS. I do, unless you point out the portion of the record in which witness has used the language referred to in the question.

Mr. WEBSTER. And you instruct him not to answer? [*No response.*] Counsel for petitioner calls attention further to the phraseology found on page 2288 [printed page 2286] at the bottom of the page, reading as follows: "Of the patents in the above list . . . set forth in the claims mechanisms embodied in all of the types of fudge edge stitching mechanisms."

Mr. PHILLIPS. I have no objection to the witness stating what he means by any language used in the testimony, but it does not seem to me of any materiality that he define language which does not appear to have been used by him.

Mr. WEBSTER. Does he decline to answer, or do you instruct him not to answer?

Mr. PHILLIPS. I instruct the witness not to answer the question in its present form.

The WITNESS. Under instructions of counsel, I decline to answer the question in its present form.

*Cross-Int.* 197. Do you say you have not used that language?

Ans. No, sir; I do not say that.

*Cross-Int.* 198. If you have used such language, will you state whether you meant by it that the machines referred to by you operated as defined in the claim?

Ans. If I have, in any of my previous testimony, stated in con-

nection with any machine which I was discussing that the machine "embodies the means set forth in the claim" of a patent to which I referred, I meant that upon comparing the structure recited in the claim with the structure of the machine in question I found that the structure recited in the claim was present in the machine.

*Cross-Int.* 199. Then you did not mean that the machine operated as defined in the claim, but that it was capable of so operating. Am I right in my statement?

Mr. PHILLIPS. Question objected to as being too vague and ambiguous to be intelligibly answered, it not appearing what specific claims are referred to or that any claim referred to defines a mode of operation.

*Ans.* If I have used the expression "embodies the means set forth in the claim" with reference to a claim which contained a functional statement indicating how the mechanism recited in the claim operates, I have meant that the machine with which I have compared the claim operated as stated in the claim.

*Cross-Int.* 200. You have, in your direct testimony, enlarged to a considerable extent as to the large cost to the defendant company in the production of various machines and in the invention of various types of machines, as shown in patents to which you have made reference. I now ask you whether you wish to have it understood by such testimony that all of the inventions set forth in the various patents about which you have testified were inventions made by salaried or hired employees of the United Company?

*Ans.* No, sir; I do not wish so to be understood.

*Cross-Int.* 201. Is it, then, a fact that very many of the patents about which you have testified were purchased by the United Company of parties other than its employees?

*Ans.* It is a fact as to some of them; yes, sir.

*Cross-Int.* 202. Do any of the patents about which you have testified relate to machines known as "slugging machines", such as were manufactured by one Preston, or such as were made under patents issued to, or owned by, one Preston?

Mr. PHILLIPS. Question objected to as having no bearing upon anything touched upon in the direct examination of this witness,

and the witness is instructed to answer the question only so far as it relates to any patent with regard to which he has testified.

*Ans.* In my testimony regarding the experimental slugging machine, first known as "Ziz slugging machine", and later as "slugging machine No. 5", I enumerated, in the list of "patents which set forth in their claims the organization of this machine", certain patents granted to the United Shoe Machinery Company as assignee of Albert F. Preston.

*Cross-Int.* 203. Will you kindly enumerate the patents referred to in your last answer?

*Ans.* Reissue patent No. 12,820 (reissued June 23, 1908), Albert F. Preston, machine for driving fasteners.

Reissue patent No. 12,821 (reissued June 30, 1908), Albert F. Preston, nailing machine.

Patent No. 1,030,829, June 25, 1912, Albert F. Preston, machine for making and driving fasteners.

*Cross-Int.* 204. Do any of the patents about which you have testified relate to machines known as "the Richardson machine"?

*Mr. PHILLIPS.* Objected to as relating to nothing touched upon in the direct examination of this witness, and unless counsel can show for what reason the question is competent I shall instruct the witness not to answer.

*Ans.* Under instructions of counsel, I decline to answer.

*Mr. WEBSTER.* Counsel for petitioner respectfully suggests that the competency of the question should be left for the determination of the court hereafter.

*Cross-Int.* 205. In your testimony you have referred to machines for attaching the bottoms of McKay sewed shoes, and in connection with such testimony you have referred to various patents. Will you state whether any of the patents to which you have made reference in your testimony relate to a machine for attaching bottoms of McKay sewed shoes of the type of machine known as "the Richardson machine"?

*Mr. PHILLIPS.* The same objection and the same instruction.

*Ans.* Under instructions of counsel, I decline to answer.

*Cross-Int.* 206. During your direct testimony you made refer-

ence to various machines and mechanisms which you stated were covered by claims of pending applications, and I, during the time of such testimony, entered on record a notice that I would call for the names of the applicants, together with the date of the filing of such applications, and I now, without waiving the objection heretofore made to the introduction of such testimony, will ask you if you will give the names of the various applicants for patents of said pending applications and the date when said applications were filed?

Mr. PHILLIPS. It does not seem to be material what the exact date of a pending application is. I see no objection to the witness giving the name of the applicant and a statement as to whether the application was filed before or after December 12, 1911, and I shall instruct him to answer the question with this limitation.

*Ans.* The request for this information was made in connection with the machines, the discussion of which begins on page 2787 of the typewritten record [printed page 2631]. The names of the applicants who filed pending applications for patents referred to in that discussion are as follows:—

**ASSEMBLING MACHINE: REX TURN TOE.**

One application for patent, Orrell Ashton, filed prior to December 12, 1911.

One application for patent, Orrell Ashton, filed since December 12, 1911.

**BUILDING MACHINE — PYRAMID HEEL: MODELS B, C, D.**

One application for patent, John H. Richardson, filed prior to December 12, 1911.

**CEMENTING MACHINE — HUB LINING: MODELS E AND F.**

One application for patent, William G. Eaton, filed prior to December 12, 1911.

One application for patent, Edward Erickson and John W. Cosgrove, filed since December 12, 1911.

**CUTTING AND SCORING MACHINE — INSOLE: MODELS D AND E.**

One application for patent, Miller Cook, filed prior to December 12, 1911.

One application for patent, James Cavanagh, filed prior to December 12, 1911.

**EMBOSSING MACHINE : MODEL B.**

One application for patent, Henry W. Winter, filed prior to December 12, 1911.

One application for patent, Malcolm F. Wallace, filed since December 12, 1911.

One application for patent, Henry W. Winter, filed since December 12, 1911.

**EYELETTING MACHINE : CAMEO FOOT POWER.**

One application for patent, Daniel W. Colby, filed prior to December 12, 1911.

**EYELETTING MACHINE : UNIVERSAL.**

One application for patent, Walter Shaw, filed prior to December 12, 1911.

**FINISHING MACHINE: U S M C BUTTONHOLE.**

Three applications for patents, George S. Hill, filed prior to December 12, 1911.

One application for patent, George S. Hill, filed since December 12, 1911.

**MAKING MACHINE : BUTTONHOLE.**

Two applications for patents, George S. Hill, filed prior to December 12, 1911.

Three applications for patents, George S. Hill, filed since December 12, 1911.

**MARKER : IMPROVED STAR SOLE.**

One application for patent, Hiram W. Gordon, filed prior to December 12, 1911.

**MOLDING MACHINE — AMERICAN TWIN SOLE : MODELS B AND C.**

Two applications for patents, Edwin N. Preble, both filed prior to December 12, 1911.

**MOLDING MACHINE : GOODYEAR POWER.**

One application for patent, William C. Meyer, filed prior to December 12, 1911.

**MOLDING MACHINE: STITCH-DOWN UPPER.**

One pending application for patent, Karl Engel and Louis M. Brown, filed prior to December 12, 1911.

**PINCER MACHINE: U S M C BENCH.**

One application for patent, Pearl J. Wentworth, filed prior to December 12, 1911.

**PUNCHING MACHINE — MODEL A: ROYAL TIP.**

One pending application for patent, John H. Rigby, filed since December 12, 1911.

**ROUNDING MACHINE — PLANET SOLE: MODELS C AND D.**

One pending application, Benjamin F. Mayo, filed prior to December 12, 1911.

One application for patent, Frederick J. Nash, filed prior to December 12, 1911.

One application for patent, Gideon Julian, filed since December 12, 1911.

**ROUNDING AND RANDING MACHINE: GOODYEAR HEEL SEAT.**

One application for patent, William C. Baxter, filed since December 12, 1911.

**SANDING MACHINE — MODEL A: TAP AND SOLE.**

One pending application, Jacob R. Scott, filed prior to December 12, 1911.

**SCARFING MACHINE — MODEL N: TAP.**

One pending application, John B. Hadaway, filed prior to December 12, 1911.

**SCREW MACHINE — MODEL B: RAPID STANDARD.**

One application for patent, Louis A. Casgrain, filed prior to December 12, 1911.

**SKIVING MACHINE — MODEL A : CHAMPION HEEL LIFT.**

One application for patent, Joseph H. Pope, filed prior to December 12, 1911.

One application for patent, Frederick J. Nash, filed prior to December 12, 1911.

**SKIVING MACHINE — MODEL A : CHAMPION SHANK.**

One application for patent, Joseph H. Pope, filed prior to December 12, 1911.

One application for patent, Frederick J. Nash, filed prior to December 12, 1911.

One application for patent, Jacob K. Kourian, filed prior to December 12, 1911.

**SKIVING MACHINE — PLUMA : MODELS C AND D.**

One application for patent, Paul Krippendorf, filed prior to December 12, 1911.

One application for patent, Eugene F. Davenport, filed prior to December 12, 1911.

Three applications for patents, Alexander M. Alexander, filed prior to December 12, 1911.

**SNIPPING MACHINE — GOODYEAR INSOLE TOE.**

One application for patent, John B. Hadaway, filed prior to December 12, 1911.

**SOFTENING MACHINE — TOE : MODELS C AND D.**

One application for patent, Eugene L. Keyes, filed prior to December 12, 1911.

One application for patent, William A. Boyden, filed prior to December 12, 1911.

One application for patent, Louis M. Brown, filed prior to December 12, 1911.

One application for patent, Frank E. Fernald, filed prior to December 12, 1911.

One application for patent, Gustaf E. Hallquist, filed prior to December 12, 1911.

**SOFTENING MACHINE — TOE : MODEL E.**

One application for patent, Eugene L. Keyes, filed prior to December 12, 1911.

One application for patent, William A. Boyden, filed prior to December 12, 1911.

One application for patent, Louis M. Brown, filed prior to December 12, 1911.

One application for patent, Frank E. Fernald, filed prior to December 12, 1911.

One application for patent, Gustaf E. Hallquist, filed prior to December 12, 1911.

**SPLITTING MACHINE — EMPIRE : MODELS C AND D.**

One application for patent, Frederick M. Furber, filed prior to December 12, 1911.

**STAMPING MACHINE — MODEL C: EAGLE SOLE.**

One application for patent, Henry W. Winter, filed prior to December 12, 1911.

**STAMPING MACHINE — MODEL C: EAGLE UPPER.**

One application for patent, Henry W. Winter, filed prior to December 12, 1911.

**TACKING MACHINE — No. 1 U S M C INSOLE.**

One application for patent, Fred L. MacKenzie, filed since December 12, 1911.

**TRIMMING MACHINE — ULTIMA HEEL.**

One application for patent, Alonzo E. West, filed prior to December 12, 1911.

*Cross-Int.* 207. Do you decline to give the date of the filing of said applications?

Mr. PHILLIPS. In view of the immateriality of the exact date of the filing of these applications, so far as relates to any issue triable under the order of the court before this examiner, I shall instruct the witness not to give the dates any further than he has heretofore, unless instructed to do so by the court.

*Ans.* Under instructions of counsel, I decline to state the exact dates when the applications referred to in my answer immediately preceding were filed.

*Cross-Int.* 208. *De bene*, and without waiving the objection heretofore made, does the list of pending applications you have

just read into the record comprise all the pending applications with reference to which you have testified?

*Ans.* I have, in many instances, used such expressions as: "It is anticipated that patent protection will eventually be obtained." I cannot state, without going through the records, whether when I have specifically referred to pending applications I have stated the name of the inventor and indicated whether the application was filed before or since December 12, 1911.

*Cross-Int.* 209. Do you decline to produce and read into the record or to testify as to all applications for patents with reference to which you have testified in your direct examination, giving the names of the applicants and the dates of the filing of such applications?

**Mr. PHILLIPS.** We have already stated our position in this matter, that in view of the immateriality of the exact date of the filing of any of these applications, as at present advised the witness is instructed not to state such dates unless ordered to do so by the court.

*Ans.* If desired, I can go through the record and note instances where I have specifically referred to pending applications and prepare a list stating the name of the inventor and indicating whether the application was filed before or since December 12, 1911.

*Cross-Int.* 210. And you decline to give the date of the filing of such applications, do you?

*Ans.* Under instructions of counsel, I do, except where such dates have already been stated on the record.

**Mr. WEBSTER.** Counsel for the petitioner gives notice that objection heretofore made to all testimony or reference to pending applications or the structures of pending applications will be insisted upon at the hearing, and that at the proper time motion will be made to strike from the record all testimony relating to such applications and mechanisms referred to in such applications.

*Cross-Int.* 211. Are all departments of the United Company under one management or head?

**Mr. PHILLIPS.** Question objected to as relating to nothing that has been referred to in the direct examination of this witness and

nothing of any materiality to any issue to be heard before this examiner under the order of the court, and as the witness can be assumed to have no knowledge as to the management of the United Shoe Machinery Company, the witness is instructed that he need not answer the question unless ordered to do so by the court.

*Ans.* Under instructions of counsel, I decline to answer the question.

Mr. WEBSTER. The attention of the court is respectfully called to the fact that the witness has testified that various machines were put out under various departments specified by him, and it is respectfully urged that in cross-examination the petitioner is entitled to know whether these departments are independent of each other, dependent upon each other, or under one management.

*Cross-Int.* 212. Now, inviting your attention to your testimony with reference to welt and turn machines, I understand that the machine which you have designated as the 1899 machine went into use prior to 1899; am I correct in my understanding?

*Ans.* Yes, sir.

*Cross-Int.* 213. Kindly state how long prior to 1899 the welt and turn machine designated by you as the 1899 machine went into use.

*Ans.* I don't know the exact date, but it was several years prior to 1899.

*Cross-Int.* 214. And by what company was it put out?

*Ans.* By the Goodyear Shoe Machinery Company.

*Cross-Int.* 215. Do you know whether that was the Goodyear Shoe Machinery Company of Connecticut, or of Maine?

Mr. PHILLIPS. Question objected to as relating to nothing touched upon in the direct examination of this witness, and the witness can be assumed to know nothing with regard to the incorporation of the Goodyear Shoe Machinery Company, whether it was in Maine or Connecticut.

*Ans.* It was put out by the company which was doing business under the name of "Goodyear Shoe Machinery Company". I do not recollect under the laws of what State that company was incorporated.

*Cross-Int.* 216. Are you willing to ascertain and testify later?

*Ans.* Yes, sir; if so instructed by counsel.

Mr. WEBSTER. Counsel for petitioner inquires of counsel for defendant whether he will permit the witness to ascertain the fact inquired about and testify to it later?

Mr. PHILLIPS. It seems to me that this whole matter is foreign to any inquiry material under the present order of the court, and that it has all been gone into in the testimony of several witnesses in open court. But as at present advised I can see no objection to the witness securing such data, but I reserve any objection that I may desire to make until later.

*Cross-Int.* 217. I notice that in your answer 8 you say: "a welt and turn machine is used to perform two different operations in the manufacture of shoes . . . to attach the welt and upper to the insole and also to secure together the upper and sole of a turn shoe." Kindly state whether any change is required in the welt and turn machine referred to when it is performing the "different operations".

*Ans.* Yes, sir.

*Cross-Int.* 218. What changes?

*Ans.* The welt guide of the machine which is used when the machine is employed on welt work has to be removed and a guide suitable for the turn work substituted.

*Cross-Int.* 219. And the operation of the remainder of the machine is the same in both instances?

*Ans.* Yes, sir.

*Cross-Int.* 220. So that the change is merely a change in guides; am I right?

*Ans.* Yes, sir.

*Cross-Int.* 221. I observe in your answer 9 you say: "The machine of this Goodyear and Hadley patent was put into commercial use and was extensively used for some years." Kindly state for how many years that machine was used, according to the best of your information.

*Ans.* I think it was used for at least three or four years.

*Cross-Int.* 222. And what machine followed the machine you refer to as the Goodyear and Hadley machine?

*Ans.* The machine of the Goodyear and Hadley patent No. 170,-547, November 30, 1875, was superseded by the machine of patent No. 190,709, May 15, 1877, Dancel.

*Cross-Int.* 223. And for how long a time was the machine of the Dancel patent of May 15, 1877, in use, so far as you are informed?

*Ans.* Machines constructed substantially as shown in the Dancel patent No. 190,709 were used commercially for many years; certainly over twenty years.

*Cross-Int.* 224. And were the machines of the Dancel patent 190,709 adapted for welt and turn work?

*Ans.* Yes, sir.

*Cross-Int.* 225. And did the machine of the Dancel patent No. 190,709 continue in commercial use until the machine you designate as the welt and turn machine of 1899 came into use?

*Ans.* Yes, sir.

*Cross-Int.* 226. And are you unable to state when the old machine called by you the "welt and turn machine of 1899" first went into use?

*Ans.* I cannot at this time state the time accurately, although, as I have previously stated, it was several years prior to 1899.

*Cross-Int.* 227. Pardon me, but the term "several years" may mean three years and may mean fifteen years; will you kindly approximate it as near as you possibly can?

*Ans.* I believe the machine was first put into commercial use about 1894, or within one or two years before or after that date.

*Cross-Int.* 228. And was the machine you refer to as having gone into use in 1894, or thereabouts, the machine that was officially known as "Sewing Machine, Goodyear Universal Inseam"?

*Ans.* No, sir.

*Cross-Int.* 229. Has the machine termed by you "welt and turn machine of 1899" ever gone out of use, so far as you know?

*Ans.* No, sir; the machine is still being used.

*Cross-Int.* 230. And is it still being manufactured?

*Ans.* No new machines like the welt and turn machine of 1899

are now being built, as the demand has practically or entirely ceased, and any order for one of those machines which the company might receive would be filled from the large number of machines which have been superseded by the later models, and which the company has on hand.

*Cross-Int.* 231. When you say in the last answer that none of the welt and turn machines of 1899 are being built, you mean that such machines are not being built by the United Company, do you not?

*Ans.* Yes, sir.

*Cross-Int.* 232. Can you state approximately how many of the welt and turn machines of the kind referred to by you as being welt and turn machine of 1899 are now in use in the United States?

*Ans.* I cannot state from memory, but shall be glad to ascertain, if desired?

*Cross-Int.* 233. Will you kindly do so, and at the same time, if convenient, ascertain and be prepared to testify later as to how many of such machines were in use in the United States in January, 1908, 1909, 1910, 1911 and 1912?

*Ans.* I shall be glad to obtain the information requested.

*Cross-Int.* 234. As I recall your direct testimony, the welt and turn machine of 1899 continued to be the successful commercial welt and turn machine up to October, 1908. Kindly state if I am correct in my understanding.

*Ans.* The welt and turn machine of 1899 continued to be the standard commercial machine of the United Company until the improved machine known as "Shoe Machine, Welt and Turn, Model G" was introduced in 1908. I should add, however, that from the time shoe machine, Goodyear welt and turn, model E, was introduced in July, 1902, that machine was put out in considerable numbers during the entire period from 1902 until the model G machine was introduced.

*Cross-Int.* 235. Can you give us any idea as to about how many of the 1899 welt and turn machines are in use today; that is, whether it is a dozen, hundreds, or more?

*Ans.* I prefer not to guess at the number of those machines now

in use, but have already arranged to ascertain the exact number and shall be prepared to state that number at the next session.

*Cross-Int.* 236. The welt and turn machine of 1899 was constructed and arranged to carry out the so-called Briggs method as defined in the patent to Briggs No. 461,793, October 20, 1891, was it not?

*Ans.* Yes, sir.

*Cross-Int.* 237. And the mechanism incorporated in that welt and turn machine of 1899 is set forth in patent to French and Meyer No. 412,704, dated October 8, 1889, is it not?

*Ans.* Patent No. 412,704, October 8, 1889, French and Meyer, shows substantially the welt and turn sewing machine of 1899 with the changes in the organization shown in the drawings and described in the specifications of that patent, which are shown and described in the claims of patents of later date about which I have previously testified.

*Cross-Int.* 238. The "patents of later date", as I understand your testimony, are:—

Patent No. 488,505, LaChapelle, dated December 20, 1892, tension device for sewing machine.

Patent No. 518,911, Briggs, dated April 24, 1894, take-up for shoe-sewing machine.

Patent No. 561,386, French, dated June 2, 1896, sewing machine. Am I correct in my understanding?

*Ans.* Yes, sir.

*Cross-Int.* 239. Then the welt and turn machine of 1899 was, as I understand it, constructed and the machine operated as set forth in those four patents; am I correct?

*Ans.* Yes, sir.

*Cross-Int.* 240. And, so far as you know, the welt and turn machine of 1899 was not within the terms of any patent other than the four mentioned; am I right?

*Ans.* There is another patent, No. 495,452, April 11, 1893, Cole, sewing machine, which shows in its drawings and describes in its specification and in its two claims mechanism which was embodied in the welt and turn sewing machine of 1899.

*Cross-Int.* 241. Was the mechanism of the Cole patent last referred to by you incorporated in all the machines that were put out by the United Company of the welt and turn type?

*Ans.* I think so.

*Cross-Int.* 242. Have you now enumerated all the patents which relate to the welt and turn machine of 1899?

*Ans.* In addition to those patents there are some claims in patent No. 317,759, May 12, 1885, French, which define some features of construction of the 1899 welt and turn machine, and patent No. 732,729, July 7, 1903, French and Meyer, granted on an application filed December 21, 1898, discloses and defines in its claims an alternative form of wax pot used on the welt and turn machine of 1899.

*Cross-Int.* 243. Have you now mentioned all the patents that have any bearing or relation, so far as you know, to the welt and turn machine of 1899?

*Ans.* Yes, sir, as that machine was put out in 1899.

*Cross-Int.* 244. Were any of the mechanisms defined in any of the patents you have specified omitted from the welt and turn machine of 1899 when it was being put out in 1899?

*Ans.* Not so far as I know, except that the wax pot of patent No. 732,729, July 7, 1903, was, as I have stated, an alternative form, and was not supplied on all machines.

*Cross-Int.* 245. Were the mechanisms of any of the patents specified by you necessary to the successful operation of the machine when constructed as set out in patent No. 412,704, or were these mechanisms simply required for the purpose of making the machine more efficient or improving its operation?

*Ans.* So far as I know, the machine was never commercially used until it incorporated the mechanisms shown and set forth in the claims of the following patents:—

Patent No. 488,505, December 20, 1892, LaChapelle.

Patent No. 518,911, April 24, 1894, Briggs.

Patent No. 561,386, June 2, 1896, French.

Accordingly, I do not know that I can state whether or not the mechanisms set forth in those patents were necessary to the success of the operation of the machine.

*Cross-Int.* 246. So that you, from your extended experience and study of the art, cannot inform the court whether the machine of patent No. 412,704, designed and adapted to carry out the Briggs method, was operative commercially without the addition of the mechanisms of the three patents referred to, or not; is that correct?

*Ans.* It is not correct.

*Cross-Int.* 247. Will you, then, kindly explain?

*Ans.* I did not make any statement as to the operativeness of the machine of patent No. 412,704.

*Cross-Int.* 248. Do you now say it was operative commercially if constructed as set out in patent No. 412,704, or do you say you do not know whether it was, or would be, or not?

*Ans.* I have no doubt that the machine shown in the drawings and described in the specifications of patent No. 412,704 could be used in attaching the welt of a welt shoe. My preceding answer, in which I referred to the LaChapelle, Briggs and French patents, was in answer to a question which inquired whether the mechanisms of those patents were necessary to the success of the operation of the machine, and I did not understand that that question involved the question of mere operativeness of the machine of patent No. 412,704.

*Cross-Int.* 249. Very well; what do you say now? If a machine were constructed as set forth in patent No. 412,704 without having incorporated in it the mechanisms of other patents you have referred to, would such a machine be a successful commercially operative machine?

**Mr. PHILLIPS.** Question objected to as calling for mere guess-work on the part of the witness, it not appearing that he ever saw a machine so constructed or had an opportunity to observe its operation.

**Mr. WEBSTER.** Counsel for the petitioner respectfully calls the attention of the court to the fact that this witness has qualified, or, at least, attempted to qualify, as an expert with reference to patents and operative mechanisms, and therefore it is respectfully submitted that the question is competent in every respect.

**Mr. PHILLIPS.** The witness has already testified that the machine

of that patent would be an operative machine for the purpose of sewing a welt and upper to the insole of a welt shoe.

*Ans.* I can only state that I have never seen a welt and turn machine of 1899 which did not embody in its organization the mechanisms set forth in the LaChapelle patent No. 488,505, Briggs patent No. 518,911 and French patent No. 561,386. I know that the mechanisms set forth in those later patents are very useful in the machine and I am certain that no customer of the United Company would have accepted at any time since February, 1899, the welt and turn machine of 1899 which did not embody in its organization the improvements of those patents.

*Cross-Int.* 250. When you refer in your last answer to mechanisms of the three patents 488,505, 518,911 and 561,386, do you mean the mechanisms claimed in those patents?

*Ans.* Yes, sir.

*Cross-Int.* 251. Does the mechanism claimed in the LaChapelle patent No. 488,505, December 20, 1892, affect the operation of the mechanism of patent 412,704, which, as I understand you to say, is adapted for carrying out the Briggs method?

*Ans.* Yes, sir, in so far as it affects the operation of the tension mechanism of the machine of French and Meyer patent No. 412,-704.

*Cross-Int.* 252. And is the mechanism claimed in the LaChapelle patent referred to necessary to the successful carrying out of the Briggs method as defined in patent 412,704?

*Ans.* As I have stated, I consider that the mechanism of the LaChapelle patent No. 488,505 is important to the commercial success of the welt and turn machine of 1899; but I will state that I do not understand that the incorporation of the LaChapelle improvement in the machine of patent No. 412,704 affected in any way the practice of the Briggs method by the machine shown in that patent.

*Cross-Int.* 253. Do you make the same answer with reference to patent No. 518,911, Briggs?

*Ans.* Yes, sir; with the addition that the practice of the Briggs method by the machine shown in French and Meyer patent No.

412,704 was, undoubtedly, facilitated by the improvement set forth in the Briggs patent No. 518,911.

*Cross-Int.* 254. Referring now to Briggs patent No. 518,911, if the plunger *d* is fixed in position, will the device then be such a device or mechanism as is referred to in the claims of that patent?

*Ans.* No, sir; in my opinion, it would not.

*Cross-Int.* 255. You were knowing to the fact, were you not, when you testified in direct examination that patent No. 412,704 had been held by the courts to have expired September 17, 1902?

*Ans.* Yes, sir.

*Cross-Int.* 256. So that the live patents applicable to the welt and turn machine of 1899 were, after September 17, 1902:—

Patent of LaChapelle No. 488,505.

Patent of Briggs No. 518,911.

Patent of French No. 561,386.

Patent of Cole No. 495,452.

Patent of French and Meyer No. 732,729.

Kindly state if I am correct.

*Ans.* That list will be correct with the addition of patent No. 461,793, October 20, 1891, Briggs.

*Cross-Int.* 257. You did not mean by your last answer that there is any mechanism of the Briggs patent incorporated in the welt and turn machine of 1899, did you?

*Ans.* No, sir; but that machine in its operation practiced the method defined in the claim of the Briggs patent No. 461,793.

*Cross-Int.* 258. Specify which one of the patents, as applying to the welt and turn machine of 1899, was alive at the date of the filing of the petition herein?

*Ans.* Patent No. 561,386, June 2, 1896, French.

Patent No. 732,729, July 7, 1903, French and Meyer.

*Cross-Int.* 259. Now, taking up the first wax pot patent, is that essential to the successful operation of the welt and turn machine of 1899?

*Ans.* Probably not.

*Cross-Int.* 260. Is the mechanism claimed in the patent to

French No. 561,686 essential to the successful commercial operation of the welt and turn machine of 1899?

Mr. PHILLIPS. Question objected to because the witness has already stated that he never saw a machine operated without this mechanism.

*Ans.* As I explained in detail in the early part of my testimony relating to shoe machine, Goodyear welt and turn, the improvement of patent No. 561,386, June 2, 1896, French, contributed substantially to the successful commercial operation of the welt and turn machine of 1899 and overcame serious difficulties which had been experienced in the commercial use of welt-sewing machines before this improvement was made. As I have stated, I have never seen one of the welt and turn machines of 1899 which was not provided with this improvement, and I am confident that no customer of the United Company would have used one of those machines without the advantages secured by this improvement.

*Cross-Int.* 261. In speaking of the improvement of patent No. 561,386 in your last answer, do you mean the improvement defined in the claim of that patent?

*Ans.* Yes, sir.

*Cross-Int.* 262. Did you ever see a welt and turn machine of 1899 in which the looper carrier was intermittently put in contact with the heated block or plate?

*Ans.* I never saw one in which it was not.

*Cross-Int.* 263. In answer to question 10 you say, among other things, that you have examined the welt and turn sewing machine No. 228, illustrated in plaintiff's photograph Exhibit 232, at the factory at Whitman, Massachusetts, and that you find that machine embodies the means set forth in the claim of this French patent No. 561,386, June 2, 1896; are you still of the opinion that the mechanism of the machine referred to, No. 228, is so constructed and arranged that the heater block or plate comes in actual contact with the looper mechanism?

Mr. PHILLIPS. Question objected to as absolutely immaterial.

*Ans.* The claim of patent No. 561,386 calls for means to move the looper carrier "to put it in contact intermittently with the said

heated block or plate". In my opinion, the machine No. 228 at the Whitman factory of the Commonwealth Shoe & Leather Company operates as called for by that claim.

*Cross-Int.* 264. Did you turn the machine over when you examined it; that is, did you revolve the shaft so as to put the mechanism in operation?

*Ans.* No, sir; the machine was being used and I observed it during its operation.

*Cross-Int.* 265. Now, if the looper carrier is not brought in actual contact intermittently with the heater block, then the mechanism is not such as is referred to in the claim of the patent in question, is it?

*Mr. PHILLIPS.* This line of examination is objected to as trivial.

*Ans.* In my opinion, the claim of patent No. 561,386 would accurately describe an organization in which the looper or looper carrier moved near enough to the heated block or plate to be heated by it, whether or not the looper carrier was moved actually into contact with the heated block or plate.

*Cross-Int.* 266. Are you familiar with the case of United Shoe Machinery Company *v.* Greenman, reported in 146 Fed., page 759, in which patent No. 561,386 was passed upon by the court?

*Ans.* My attention has not been called to that case for several years, so I cannot say that at this time I am familiar with the case.

*Cross-Int.* 267. I desire to be perfectly fair with you, and I therefore inquire whether you would like to examine that case and state whether you wish to change your testimony in any respect after such examination?

*Ans.* I shall be glad to examine that case and shall certainly wish to change any testimony I have given if I find that to be incorrect.

*Cross-Int.* 268. Will you kindly state whether any of the welt and turn machines of 1899 have been returned to the United Shoe Machinery Company by the lessees?

*Ans.* Yes, sir; a great many.

*Cross-Int.* 269. State what has become of the machines so returned.

*Ans.* I cannot answer that question of my own knowledge, but

I have no doubt that, in accordance with the usual practice of the company when old machines are returned which have been replaced by improved machines, many of those old welt and turn machines of 1899 have been junked.

*Cross-Int.* 270. Can you ascertain and tell us about how many of the welt and turn machines of 1899 have been junked?

— *Ans.* I do not know whether any record was kept, but I will endeavor to ascertain.

[*Adjourned to 10 o'clock A. M., Thursday, October 30, 1913.*]

BOSTON, MASS., October 30, 1913.

*Cross-Int.* 271. Have you prepared the data called for at the session yesterday with reference to the number of welt and turn machines of 1899 out at certain dates; and, if so, will you kindly spread the same upon the record?

*Ans.* I was requested to ascertain and state how many of the 1899 welt and turn machines were in use on January 1, 1908, and on the 1st of January in each succeeding year, to and including January 1, 1912; also, the number which are now in use. I find that the numbers of machines on the dates named which were in shoe factories were as follows:—

On January 1, 1908, there were 1914 of the welt and turn machines of 1899 in shoe factories.

On January 1, 1909, there were 1991.

On January 1, 1910, there were 1958.

On January 1, 1911, there were 1714.

On January 1, 1912, there were 1278.

On October 1, 1913, there were 739.

The date last named, October 1, 1913, is the last date for which it is convenient to state the number in use as the United Company's records are kept.

*Cross-Int.* 272. You have stated the numbers of welt and turn machines of 1899 in shoe factories; kindly state whether such machines, during the period inquired about, were also used in shoe repairing shops and places other than in factories.

*Ans.* I think they are used to some extent, but I am not advised

as to how many are in use in cobblers' shops. Such machines as are in use in cobblers' shops were, however, put out by the United Shoe Repairing Machine Company.

*Cross-Int.* 273. And is the United Shoe Repairing Machine Company one of the branches of, or under the dominion of, the United Shoe Machinery Company?

*Ans.* The United Shoe Repairing Machine Company is controlled by the United Shoe Machinery Company.

As to the other requests for information : first, as to whether the welt and turn sewing machines of 1899 which have been returned to the United Shoe Machinery Company by its customers have been junked, and as to whether the Goodyear Shoe Machinery Company which was putting out the welt and turn sewing machine of 1899 prior to February, 1899, was organized under the laws of Maine or Connecticut, I will produce that information at a later session.

*Cross-Int.* 274. Does the model G welt and turn machine do any better work, that is, sew any better seam, than the welt and turn machine of 1899?

*Ans.* No, sir.

*Cross-Int.* 275. Model G welt and turn machine is the machine that went into commercial use in October, 1908, as I understand it ; am I correct?

*Ans.* Yes, sir.

*Cross-Int.* 276. And now, to get the data all together, will you kindly state when the model K welt and turn machine went into commercial use?

*Ans.* In June, 1911.

*Cross-Int.* 277. Does the model K welt and turn machine do any better work, that is, make any better stitch, than the welt and turn machine of 1899?

*Ans.* The model K machine does not make any better seam than the welt and turn machine of 1899.

*Cross-Int.* 278. As I recollect your direct testimony, you stated that the model G and the model K welt and turn machines had a capacity of 500 stitches per minute ; am I right in my understanding?

*Ans.* Yes, sir; that is the speed at which those machines are regularly run in shoe factories.

*Cross-Int.* 279. Do you say that the capacity of a machine to do the work is dependent upon the number of stitches per minute it is capable of making?

*Ans.* No, sir; I don't say that, because the capacity of a machine is also largely dependent upon the facilities which it affords the workman for its convenient operation, and upon the presence or absence in its organization of means which decreases the time during which the machine is necessarily idle. I do say, however, that the speed at which a machine operates has an important bearing upon its capacity, because obviously a machine running at higher speed will do more work while it is operating than a machine running at a lower speed.

*Cross-Int.* 280. Would you say that if the welt and turn machine, models G and K, had a capacity of 3000 stitches per minute, more work could be done on those machines by the ordinary operative than with the machine running at 500 stitches per minute?

Mr. PHILLIPS. Question objected to as purely hypothetical and based on nothing touched upon in the direct examination of the witness, and calling for absurd and impracticable speed of operation.

*Ans.* As those machines are at present organized, I doubt whether an operator could present a shoe properly for the operation of the machine run at as high a speed as 3000 stitches per minute.

*Cross-Int.* 281. Then it is a fact, is it not, that the capacity of a welt and turn machine cannot be determined by the number of stitches per minute only; am I correct?

Mr. PHILLIPS. Question objected to as being mere repetition of a former interrogatory which the witness has fully answered.

*Ans.* I think that my second preceding answer fully answered this question, although I shall be glad to express my opinion again if desired.

*Cross-Int.* 282. Can you answer that by yes or no?

Mr. PHILLIPS. The witness is instructed—that he is not obliged

to give a categorical answer to the question, but may state such explanation as he deems proper.

*Ans.* As I have previously stated, the capacity of a welt and turn machine cannot be determined by its speed alone, because the conveniences afforded to the operator in his use of the machine and provision in the organization of the machine for reducing the time during which the machine is idle in the course of the day have an important bearing upon the capacity of the machine. I repeat, however, that it is obvious that while the machine is operating it will do more work as the speed is increased.

*Cross-Int.* 283. Are you willing to state whether, so far as you know, the introduction of the models G and K welt and turn machines has resulted in lessening the cost of manufacture of shoes?

**Mr. PHILLIPS.** Question objected to as vague and indefinite, it not appearing what kind of shoes are referred to.

*Ans.* As regards the model G machine, when operators are paid by the day the increased capacity of the machine will obviously result in a saving to the manufacturer. When the operator is paid according to the number of shoes which he sews, there are two elements to be considered in figuring the saving to the manufacturer. If the operator is paid less per pair of shoes on the machine having the greater capacity, the manufacturer will effect a saving, while in any event there will be some saving in capital expense owing to the fact that a less number of machines having the greater capacity will be needed for a given daily output, and less factory space and less power will be required.

As regards the model K machine, the foregoing statements will apply in greater degree to that machine, owing to its increased capacity over the model G machine, and, furthermore, as I have previously testified, that machine effects a saving to the manufacturer of not less than one-quarter of a cent per pair of shoes in his weltting.

**Mr. WEBSTER.** Answer objected to as not responsive, as evasive and argumentative, and counsel for petitioner moves that the same be stricken from the record, excepting as to that portion in which

the witness states that there is a saving in the use of the model K machine in the cost of weltting.

*Cross-Int.* 284. Will you kindly examine the shoe I now hand you, and state whether it is a plain, ordinary welt shoe?

*Ans.* [Witness examines shoe and says:] That would appear to be a proper characterization of the shoe which was handed me for examination.

[*The shoe presented to and examined by the witness is offered in evidence, and is marked "Plaintiff's Exhibit 261".*]

*Cross-Int.* 285. How many pairs of shoes like Plaintiff's Exhibit 261 would you say could be sewed by an ordinary operative on a welt and turn machine of 1899 in a day of eight hours?

*Ans.* The number of shoes which an average operator of the welt and turn machine of 1899 will sew in a day of eight hours will vary greatly according to the kind of work and the rapidity with which the operator handles the shoe. The output of that machine as run by average operators will, accordingly, vary from, say, 250 pairs per day to a maximum of probably 500 pairs per day when conditions are favorable and the operator works rapidly.

*Cross-Int.* 286. In your direct testimony with reference to out-sole stitchers and stitcher patents, in answer to question 23 (page 2275 of typewritten record) [printed page 2277] the first patent for a machine of this type was No. 127,423, June 4, 1872, Mills. Have you any information as to whether the sewing machine of the Mills patent of June 4, 1872, went into use and as to how long it was used commercially?

*Ans.* I understand that the machine which is shown substantially in the Mills patent No. 127,423, June 4, 1872, was put into commercial use and was used for a number of years.

*Cross-Int.* 287. In the same answer you refer to patent No. 253,156, dated January 31, 1882, Campbell, and you say: "The machine shown in that patent was commercially used for sewing out-soles to welts for many years." Kindly state, so far as you are able, for how many years the machine of the Campbell patent of January 31, 1882, was commercially used.

*Ans.* I think that machine was used for attaching out-soles to welts for at least eight or ten years.

*Cross-Int.* 288. In referring to welt and turn machines, you designated a certain machine made under certain patents as the "welt and turn machine of 1899", and for convenience I ask you whether it will be convenient to designate the out-sole stitcher which was in use in 1899 as the "stitcher of 1899"?

*Ans.* Yes; it will be entirely convenient to refer to that machine as the "Goodyear out-sole lockstitch machine of 1899".

*Cross-Int.* 289. Can you state whether the machine for attaching out-soles to welts manufactured and put out, as you say, commercially as shown in patent to Campbell of 1882, was the commercial machine up to the time of the adoption of the machine constructed and operating as shown in patent No. 473,870, April 26, 1892?

*Ans.* It was not the only commercial machine, as many manufacturers were using a chain-stitch machine for attaching out-soles to welts. Prior to the introduction of the machine shown substantially in patent No. 473,870, April 26, 1892, French and Meyer, that is, the Goodyear out-sole lockstitch machine of 1899, both that chain-stitch machine and the machine of Campbell patent No. 253,156, January 31, 1882, had been superseded by the machine of patent No. 366,935, July 19, 1887, Dancel.

*Cross-Int.* 290. Will you kindly state by whom, so far as you know, the several machines referred to, viz., the machine put out under the Mills patent of 1872, the machine put out under the Campbell patent of 1882 and the machine put out under the Dancel patent of 1887, were put out; that is, sold or leased?

Mr. PHILLIPS. Objected to as having no relation to any matter referred to by this witness in his direct examination and as the witness cannot be assumed to have any knowledge as to the matter inquired about.

*Ans.* The machine of Mills patent No. 127,423, June 4, 1872, and the machine of Dancel patent No. 366,935, July 19, 1887, were put out by the Goodyear Shoe Machinery Company or its predecessors in business.

*Cross-Int.* 291. Well, who were the predecessors, if you know?

*Ans.* I could not tell you now. It is my understanding that the machine of Campbell patent No. 253,156, January 31, 1882, was put out by a company named The Campbell Machine Company or The Campbell Shoe Machine Company, or by its predecessors in business, but I could not state this positively without an investigation.

*Cross-Int.* 292. Kindly state when, so far as you are informed, the Goodyear out-sole lockstitch machine of 1899 manufactured as set out in patents 473,870, of 1892, and 474,774, of 1892, was put out first and by whom.

*Ans.* I cannot state accurately without investigation, but I think it was between 1890 and 1893 or 1894.

*Cross-Int.* 293. To save referring to detailed answer in direct examination, will you kindly state up to what time the Goodyear out-sole lockstitch machine of 1899 continued in use as a commercial machine?

*Ans.* The Goodyear out-sole lockstitch machine of 1899, with the improvements which I discussed in detail in my previous testimony which were incorporated in it from time to time, continued to be the standard out-sole lockstitch machine put out by the United Company until the adoption of lockstitch machine, Goodyear out-sole rapid, model K, which was first put out for commercial use in May, 1910.

*Cross-Int.* 294. Kindly state whether the Goodyear out-sole lockstitch machine of 1899 was ever put out without having incorporated in it the devices or alleged inventions of the four patents referred to by you in your direct examination, namely, French and Meyer, two patents, Nos. 563,471 and 563,472, of 1896; Shriner and Adams, No. 582,510, of 1897; and Meloon, No. 675,783, of 1901; and if you answer yes, state for how long a period of time such machine was in commercial use without having embodied therein the construction of said four patents, or any of them.

*Ans.* The Goodyear out-sole lockstitch machine of 1899, when it was first put out in the early nineties, was not organized as set forth in the four patents named. As explained in my previous

testimony, that machine was so organized about 1895. For several years after that time a portion of the Goodyear out-sole lockstitch machines of 1899 which were supplied to shoe manufacturers were not organized for operation upon extension edge shoes as set forth in the patents named, but as early as January 1, 1900, a greater number of mechanisms for organizing the machine for sewing extension edge soles were being supplied to manufacturers than the number of machines which were being supplied to manufacturers.

*Cross-Int.* 295. Would it be a convenient and proper designation to use hereafter, in reference to the four patents, to refer to them as "extension edge appliance patents", so as to avoid unnecessary repetition of numbers, titles, dates, etc.?

*Ans.* I believe I have used in my previous testimony the expression "extension edge mechanism", and for convenience it may be better to continue that expression in referring to the organization of an out-sole lockstitch machine which enables that machine to attach the out-soles of extension edge shoes.

*Cross-Int.* 296. Kindly state whether, so far as you know, any of the Goodyear out-sole lockstitch machines of 1899 were in use as late as the early part of 1908 without having incorporated in them any of the mechanisms referred to as "extension edge mechanism"?

*Ans.* I believe there were a few Goodyear out-sole lockstitch machines of 1899 still in use as late as 1908 which were not organized for operation upon extension edge soles, although I understand that shortly after that time all of the Goodyear out-sole lockstitch machines of 1899 were so organized.

*Cross-Int.* 297. Do you know, and, if so, will you state, the capacity of the Goodyear out-sole lockstitch machine of 1899 when constructed without the extension edge mechanism, and when being operated by the ordinary average operator in a day of eight hours, and when operating, for instance, upon shoes substantially like Plaintiff's Exhibit 261?

*Ans.* I have no means of judging as to the capacity of the Goodyear out-sole lockstitch machine of 1899 when not provided with extension edge mechanism, as I do not recall ever having seen one

of those machines in operation which was not provided with the extension edge mechanism.

*Cross-Int.* 298. Am I correct in my recollection that you testify that welting like that shown on the shoe marked "Defendants' Exhibit 106" costs the manufacturer six cents per running foot?

*Ans.* I understand that welting such as is used in welt shoes costs from about four cents to about seven cents per running yard, according to the quality of the welting and the type of shoe for which it is to be used. Including both men's and women's shoes, probably a fair average of the cost of welting would be five cents per running yard, although the cost of welting for men's shoes of good quality would be more.

*Cross-Int.* 299. Kindly state, as near as you are able, how many of the Goodyear out-sole lockstitch machines of 1899 were out, or, in other words, in use, on or about June 1, 1909, thus including the machines with and without the extension edge mechanism.

*Ans.* I have not the figures for June 1, 1909, but on March 1, 1909, there were out 2442 of the Goodyear out-sole lockstitch machines of 1899.

*Cross-Int.* 300. You have stated that extension edge mechanisms were incorporated in many of the Goodyear out-sole lockstitch machines of 1899; will you kindly state whether the machines of 1899 were returned to the factory in order to have the attachments applied, or whether the attachments were applied at the shoe factories where the machines were in use?

*Ans.* It was the usual practice, where a manufacturer desired to organize for operation upon extension edge shoes a Goodyear out-sole lockstitch machine of 1899 which he had and which was not so organized, to incorporate the mechanism in the machine in his factory.

*Cross-Int.* 301. In your direct testimony with reference to rough rounders and channelers you made reference to the rough rounder and channeler of the patent to Briggs No. 463,982, dated November 24, 1891; kindly state, if you know, whether the machine constructed and operating as set forth in that patent went into use, and, if so, when it first went into use and by whom it was put out.

*Ans.* As stated in my previous testimony, the machine of patent 463,982, November 24, 1891, Briggs, was not put into commercial use.

*Cross-Int.* 302. From what source do you get your information that the machine of the patent of 1891 referred to did not go into use?

*Ans.* I have compared that patent with the machine known as "Briggs rounding machine", which was a commercial machine at one time.

*Cross-Int.* 303. And is that the whole source of your information?

*Ans.* Perhaps it will answer the question if I state that that patent No. 464,982, of November 24, 1891, was owned by the Goodyear Shoe Machinery Company, and I know that the Goodyear Shoe Machinery Company did not put out a commercial machine constructed as shown in the drawings of that patent.

*Cross-Int.* 304. You say, in one of your answers to rough rounding and channeling machines, as I understand your answer, that the mechanism of patent 463,982, November 24, 1891, Briggs, represents a step in the development of the machine which was known as "Briggs rounding machine", the commercial form of which is shown in patent No. 511,263, December 19, 1893, Briggs and Dancel, and that that machine was put out for a time. Will you kindly state by whom the machine you refer to was put out, when it was put out, and for how long a time it was in use, so far as you know?

*Ans.* The Briggs rounding machine was first put out by the Goodyear Shoe Machinery Company within a year or two after 1890. It was put out until about 1896, when it was superseded by the machine now known as "rounding and channeling machine, Goodyear Universal".

*Cross-Int.* 305. Can you state how many of the Briggs rounding machines such as referred to in the question and answer were put out?

*Ans.* About 200.

*Cross-Int.* 306. Will you now, if you have the data at hand,

answer the questions submitted to you yesterday as to the number of welt and turn machines of 1899 which were "junked", and also as to the laws of what State under which the Goodyear Shoe Machinery Company to which you referred was organized?

*Ans.* Between October 18, 1908, and October 30, 1913, the United Shoe Machinery Company "junked" 1315 of the welt and turn sewing machines of 1899.

The Goodyear Shoe Machinery Company was organized in 1889 under the laws of the State of Connecticut. That company was reorganized in 1893 under the laws of the State of Maine with the name "Goodyear Shoe Machinery Company".

*Cross-Int.* 307. By the term "junked" as used by you, am I correct in understanding that it means broken up and destroyed?

*Ans.* Yes, sir.

*Cross-Int.* 308. Referring now to your testimony with reference to insole channelers, have you any personal knowledge as to the condition of the machine No. 2072 leased to the Commonwealth Shoe & Leather Company?

*Ans.* Yes, sir, I have personal knowledge that the machine which was leased to the Commonwealth Shoe & Leather Company by the Goodyear Shoe Machinery Company on February 8, 1893, did not embody the improvements shown in the drawings and set forth in the claims of patent No. 550,402, November 26, 1895, Beckman, because those improvements had not been made and the mechanism embodying them did not exist in February, 1893.

*Cross-Int.* 309. How do you know personally, and of your own knowledge, that such mechanism did not exist in 1893?

*Ans.* My knowledge as to this fact is based upon many sources of information, among which is the fact that the application for that patent No. 550,402 was filed on April 17, 1895, which is more than two years after February 8, 1893.

*Cross-Int.* 310. And do you, a lawyer, consider that you are justified in stating a fact of your own knowledge when your information is founded upon a printed or written document executed by someone else?

*Ans.* I did not state my knowledge was based solely upon the

information obtained from the Beckman patent, but stated that my knowledge was acquired from many sources, and I might add that I also have personal knowledge of the fact that after the Beckman improvements had been produced they were incorporated in most, if not all, of the insole channeling machines which had been put out by the Goodyear Shoe Machinery Company before the Beckman improvements were made.

*Cross-Int.* 311. Were you ever in the employ of the Goodyear Shoe Machinery Company?

*Ans.* No, sir.

*Cross-Int.* 312. Have you, or did you have, personal knowledge of the business and affairs of that company in 1893?

*Ans.* No, sir.

*Cross-Int.* 313. Then, is it not a fact that your information with reference to the fact inquired about is obtained solely and only from statements made by others?

*Ans.* As further evidence as to the construction of the insole channeling machine, and as to the condition of that machine when it was leased to the Commonwealth Shoe & Leather Company on February 8, 1893, I refer to the cut on page 95 of Plaintiff's Exhibit 220, being the Goodyear Shoe Machinery Company catalogue of January 1, 1897. That cut shows the machine in the condition in which it was leased in February, 1893.

*Cross-Int.* 314. Did you have anything to do with getting up the cut or illustration referred to by you?

*Ans.* No, sir.

*Cross-Int.* 315. Did you ever see the machine from which the cut was made?

*Ans.* I have seen a machine like that cut, which was shipped to my office from the "museum" at the United Company's Beverly factory, but I have no reason for believing that this cut was made from that particular machine which I have seen.

*Cross-Int.* 316. Is it your understanding, as a lawyer, that the information you have given the court as to your source of information entitles you to testify to the facts inquired about as of your own knowledge?

Mr. PHILLIPS. Objected to as improper cross-examination, the opinion of the witness on this matter being absolutely immaterial.

*Ans.* I am confident that all of my testimony in this connection is absolutely correct.

*Cross-Int.* 317. Is that the best answer you care to make to the question?

*Ans.* I can only add that I have stated what I know to be facts.

*Cross-Int.* 318. Will you kindly state whether, so far as you know, the machine illustrated on page 95 of Plaintiff's Exhibit 220, the same being entitled a "turn and insole channeling machine", was shown and described in any patent; and, if so, what patent?

*Ans.* I have not at hand now data which will enable me to answer this question, but shall be glad to bring it at the next session if desired.

Mr. WEBSTER. Kindly do so.

*Cross-Int.* 319. Can you state from such information as you have whether the channeling machine illustrated on page 95 of Plaintiff's Exhibit 220 was used commercially for any period of time. And, if so, kindly state how long and by whom it was put out.

*Ans.* I think the machine had been put out for some years prior to the date when machine No. 2072 was leased to the Commonwealth Shoe & Leather Company, that is, February 8, 1893, but I cannot state for how long a period it had been put out. It was put out by the Goodyear Shoe Machinery Company.

*Cross-Int.* 320. I observe that in your direct testimony with reference to out-sole channelers you say (page 2352 of typewritten record) [printed page 2330]: "The Goodyear out-sole channeler is a very old machine, which, when it was active, was used for channeling the out-soles of welt shoes." Will you kindly state whether the Goodyear out-sole channeler referred to by you in that language was shown and described in any United States patent; and, if so, what patent? And in this connection, to save encumbering the record, I wish you would state for how long the Goodyear out-sole channeler was "active"?

*Ans.* I have not at hand the data which will enable me to answer this question fully, and can only state that the Goodyear out-sole channeler became inactive soon after the introduction of rounding and channeling machine, Goodyear Universal, about 1896. There is no place for the Goodyear out-sole channeling machine in the manufacture of welt shoes according to modern methods.

*Cross-Int.* 321. Can you ascertain, without undue inconvenience, whether the Goodyear out-sole channeler referred to was ever covered by patent; and, if so, will you kindly do so and testify to the fact at the next session?

*Ans.* I shall be glad to.

*Cross-Int.* 322. You have testified at some length with reference to leveling machines, and I gather from your direct testimony that the Goodyear automatic leveling machine, constructed as shown in patent to Winkley and another, No. 540,222, May 28, 1895, was an important step in advance. Will you now kindly state what type of leveling machine was in use prior to the production of the machine of the patent referred to?

*Ans.* The leveling machine which was used for leveling welt shoes prior to the introduction of the Goodyear automatic leveling machine was a vibrating roll machine in which the operator controlled by hand, during the operation of the machine, the relative inclination of the jack and the roll as required for leveling different parts of the sole. Each such machine contained only one roll and one jack, while, as I have explained, the Goodyear automatic machine comprises two rolls and two jacks, and the machine automatically levels one shoe while the operator is removing from the machine a shoe previously leveled and is substituting another shoe to be automatically leveled by the machine while he is removing from the machine the shoe first referred to. In some factories one operator runs two machines, comprising four pairs of jacks and rolls.

*Cross-Int.* 323. In order to avoid unduly extending the record I will ask you if you are willing to give the court the benefit of your knowledge and research with reference to leveling machines, and state in a general way what leveling machines were in use prior to

the date of the patent referred to, 1895, by whom they were put out, how extensively they were used, so far as you know, and whether they formed the subject-matter of any patent; and, if so, what patent?

Mr. PHILLIPS. Objected to as improper cross-examination.

*Ans.* Referring, first, to leveling machines of the vibrating roll type intended or adapted for use on welt shoes, the first patent of which I am aware showing a machine of this type is No. 44,946, Gilmore, November 8, 1864. It may be of interest to quote the second claim of this patent, which is as follows:—

"2. So arranging the jack carriage and the mechanism which impels the polisher that the polisher has a reciprocating movement but partially over the surface to be polished, while the carriage is fed through this plane of movement substantially as described, to bring the entire length of surface to the action of the polisher."

The "polisher" of this claim is a vibrating leveling roll. Prior to the Gilmore patent, No. 44,946, had been granted a patent No. 38,257, April 21, 1863, Budding, but in the machine of that patent the leveling roll was given a continuous reciprocating movement over the entire length of the sole, as distinguished from the short vibrating movement back and forth over a limited portion of the sole, as in the machine of the Gilmore patent No. 44,946 and as in the Goodyear automatic sole leveling machine of the present day. I understand that machines constructed substantially as shown in the drawings of Gilmore patent 44,946 were commercially used, but at all events machines constructed substantially as shown and described in patent No. 266,283, October 24, 1882, Gilmore, were commercially used to a considerable extent. In that machine the oscillation of the jack or work support to move the shoe in order to present the different portions of the sole to the action of the vibrating roll was effected by power.

The next machine of the vibrating-roll type which was supplied to manufacturers is shown in patent No. 403,495, May 14, 1889, Strong. This machine was really an improvement upon and development of the machine of Gilmore patent No. 266,283, October 24, 1882.

I do not now recollect the names of the concerns which put out the first types of vibrating roll machines to which I have referred, but I believe that in February, 1899, the machine of the Strong patent No. 403,495, May 14, 1889, was being supplied to manufacturers by the Carver Cotton Gin Company. It was known as "Acme Leveling Machine", and was, as I am informed, the machine in general use for leveling welt shoes when the automatic leveling machine was first supplied to manufacturers, shortly before February, 1899.

There was another machine of the vibrating roll type which was being supplied to shoe manufacturers in 1899, known as the "Star Leveling Machine". That machine was constructed substantially as shown in patent No. 435,882, September 2, 1890, Washburn. That machine was much lighter than the Acme machine, and was adapted and used for leveling turn shoes. I believe that machine was supplied to manufacturers by the Swain, Fuller Manufacturing Company. As I have explained in detail in my previous testimony on page 2711 of typewritten record [printed page 2579], it is not practicable to use a leveling machine of the vibrating roll type in leveling McKay sewed, nailed or pegged shoes, and in the portion of my testimony to which I have just referred the reasons why a vibrating roll leveling machine is not practicable for use on those classes of shoes were stated fully. It was also explained that it is, and always has been, the universal practice in leveling McKay sewed or nailed shoes to employ machines having iron lasts or jacks to support the shoe and co-operating pressing forms for imparting pressure to the sole, the machines in which such iron lasts and pressing forms were used being organized to impart pressure to the sole in a direction substantially perpendicular to the face of the sole.

I further explained that machines for leveling McKay sewed and nailed shoes are of two types, known as "rolling pressure type" and "direct pressure type", and in the portion of my testimony relating to leveling machine, Hercules, and leveling machine, Atlas, I explained that machines of these two types have different

fields and are adapted for use on different kinds or types of McKay sewed and nailed shoes.

The first patent of which I am aware disclosing a leveling machine of the rolling pressure type is No. 96,638, November 9, 1869, Tripp. It may be of interest to note the first claim of this patent, which is as follows:—

"1. The combination, with a last, arranged to oscillate as described, of a former, oscillating in unison therewith, and against the face thereof, and provided with a longitudinal convexity, fitting the hollow of the last when oscillating thereon, and concavities at the ends, fitted to work upon the heel and toe of the said last, substantially as specified."

The machine of the Tripp patent which was manually operated was commercially used, as I am informed. That machine was improved and developed into the leveling machine disclosed in patent No. 296,486, April 8, 1884, Tripp. It is my understanding that the machines of both Tripp patents were supplied to manufacturers by the Tripp Giant Leveler Company or by its predecessors in business.

The machine of the Tripp patent No. 296,486 was further improved as shown in patent No. 707,414, August 19, 1902, Heys, and the machine of that patent, known as "New Giant Leveler", went into extensive commercial use.

The United Shoe Machinery Company did not, in February, 1899, supply to shoe manufacturers any leveling machines of the rolling pressure type, nor did any of its predecessors supply such a machine just prior to February, 1899. As fully explained in my previous testimony in regard to leveling machine, Hercules, the first machine of this type which was built and put out by the United Company, and, in fact, the first leveling machine of any type which the United Company constructed and put out for use in leveling McKay sewed or nailed shoes, was put out in April, 1903, and the machine as then put out, and as subsequently improved from time to time, has been known as "Leveling Machine, Hercules".

[*Adjourned to 10 o'clock A. M., Friday, October 31, 1913.*]

BOSTON, MASS., October 31, 1913.

[*Answer to Cross-Int. 323 continued:*] [

All leveling machines of the rolling pressure type which were in use before the introduction of the Hercules leveling machine were open to the objection that after they had been used a short time they were likely to tear the wide, thin channel lips of the soles on which they operated. This difficulty was entirely obviated in the Hercules leveling machine.

As to the direct pressure type of leveling machines, the first patent of which I am aware showing a machine of the direct pressure type is patent No. 71,495, November 26, 1867, Johnson. The machine of that patent was improved as shown in patent No. 75,428, March 10, 1868, Johnson. The machine of the first Johnson patent, No. 71,325, was put out to a limited extent by the patentee, Johnson. The machine of the second Johnson patent, No. 75,428, March 10, 1868, was put out extensively by the Swain, Fuller Manufacturing Company.

The next step in the development of direct pressure leveling machines is illustrated in patent No. 118,185, August 22, 1871, Blaney. So far as I can learn, only a few machines constructed as shown in this Blaney patent were put into commercial use.

Patent No. 141,058, July 22, 1873, Johnson, illustrates an improvement in the Johnson machine as put out by the Swain, Fuller Manufacturing Company. The machine of patent No. 141,058, July 22, 1873, was a double machine comprising two pairs of co-operating pressing forms and iron lasts.

In the machines of the direct pressure type as constructed under the patents already referred to there was no convenient means for adjusting the relative positions of the pressing form and last to adjust them approximately in accordance with varying thicknesses of work. Manually adjustable pressing forms were first disclosed in patent No. 164,363, June 15, 1875, Collyer, which discloses a gang machine of the rotary type. A later development in this direction is represented by patent No. 230,187, July 20, 1880, Johnson. This patent shows a machine provided with two pairs of

pressing forms and iron lasts and a machine constructed substantially as shown in this patent No. 230,187, but provided with six pairs of lasts and jacks, was put out extensively by the Swain, Fuller Manufacturing Company.

The next step in the development of direct pressure leveling machines is disclosed in patent No. 384,893, June 19, 1888, Cutcheon. The distinctive characteristic of this machine was provision for moving one of the iron lasts into pressing position simultaneously with the movement of the other last away from the pressing form into position of presentation. It may be of interest to note the first claim of this Cutcheon patent No. 384,893, which is as follows:—

“ 1. A machine for beating out the soles of boots and shoes, provided with two jacks, two molds, and means, substantially as described, having provision for automatically moving one jack in one direction while the other is being moved in the opposite direction, whereby the sole of the shoe upon one jack will be under pressure while the other jack will be in a convenient position for the removal of the shoe therefrom.”

The machine of this Cutcheon patent 384,893 was supplied to manufacturers by the Tripp Giant Leveler Company, or by its predecessors in business.

As I have already indicated, the earlier machines of the direct pressure type had no provision for adjustment in accordance with varying thicknesses of the stock, that is, the combined thickness of the insole and out-sole, while the machines commercially used, beginning with the machine of Collyer patent No. 164,363, June 15, 1875, were provided with means for manually adjusting the relative position of the iron last and the pressing form. This manual adjustment, however, adapted the machine only approximately for its operation upon varying thicknesses of stock, and the adjustment was largely, and perhaps entirely, a matter of guess-work on the part of the operator. The first patent disclosing a machine which was adjusted automatically to varying thicknesses of work, and then exerted uniform pressure upon the sole of the shoe irrespective of its thickness, was No. 557,744, April 7, 1896, Winkley. This improvement was an important advance in the art, as all direct pressure leveling machines in use up to that time

had exerted different degrees of pressure upon stock of different thicknesses, frequently imparting enough pressure to thicker stock to injure the sole and often imparting insufficient pressure to thinner stock so that the sole did not receive enough pressure to level it properly. As has been explained in my previous testimony, the United Company's leveling machine, *Atlas*, embodying mechanism defined in broad terms in the Winkley patent No. 557,744, April 7, 1896, is shown substantially as it was first put into commercial use in patent No. 818,504, April 24, 1906, Winkley.

In the earlier part of this answer I have stated that the Star leveling machine constructed substantially as shown in patent No. 435,882, September 2, 1890, Washburn, was used for leveling turn shoes. This machine, which was known in the industry as "the man killer", was superseded by the United Company's leveling machine, Goodyear welt and turn (turn work), which, as stated in my previous testimony in regard to that machine, was first put into commercial use in June, 1906, and is shown substantially as it was first put out in patent No. 1,004,155, September 26, 1911, Eppler (application filed May 3, 1906).

*Cross-Int.* 324. Do the terms "leveling machine", "laying machine" and "beating machine" relate to the same general type or class of machines; that is, are they all designed for shaping the sole?

*Ans.* A sole-laying machine is used in the manufacture of welt shoes for pressing upon the bottom of the shoe the sole, to the flesh side of which has previously been applied a coating of cement. The object of this operation is to secure the sole temporarily in position during the rounding and channeling and the out-sole stitching operations. Such shaping as is imparted to the sole during this operation is chiefly, and perhaps only, for the purpose of getting approximately all of the flesh side of the sole into contact with the bottom of the shoe and any effect which this machine has upon the final shaping of the finished sole is negligible; in fact, it is customary to "mold" soles before they are laid, to give them a contour approximating that of the bottom of the last, to facilitate the laying.

The leveling operation, as has been fully explained in my previous testimony, is performed for the purpose of imparting the final face contour to the bottom of the sole after it has been secured to the shoe. Such machines are sometimes styled in the industry "beating out machines". The single word "beating" is probably too general to be applied to this operation, as it is also used to indicate other operations performed upon the shoe.

*Cross-Int.* 325. Then would it be proper to say that the machine of the Cutcheon patent dated June 19, 1888, No. 384,893, entitled "Beating Out Machine", the same being Plaintiff's Exhibit 191, is a leveling machine?

*Ans.* Yes, sir; the machine shown in the drawings of that patent is a sole-leveling machine.

*Cross-Int.* 326. And is a machine so constructed adapted also to be used as a laying machine?

*Ans.* Very likely it could be used as a sole-laying machine, and undoubtedly a machine embodying mechanisms set forth in the claims of that Cutcheon patent could be used for laying soles.

*Cross-Int.* 327. You have referred at some length to the automatic feature of some of the leveling machines, among which is the machine termed "Automatic Leveler" shown in Plaintiff's Exhibit 234, which, as I understand from your testimony, is the same as shown in the cut on page 28 of Plaintiff Exhibit 190, and I would like to inquire just what you mean by the term "automatic", that is, whether the machine stops within a predetermined period of time, or after a certain number of revolutions of a part of its mechanism, or whether its stopping period is determined by some other condition?

*Ans.* In the first place I beg to call attention to the fact that I have testified that the machine shown in Plaintiff's Exhibit 234 is not like the machine shown on page 28 of Plaintiff's Exhibit 190, being United Company's catalogue of 1902, because the work-supporting mechanism shown in Plaintiff's Exhibit No. 234 is substantially different from that illustrated in the cut on page 28 of Plaintiff's Exhibit 190.

As to the automatic operation of the Goodyear automatic sole-

leveling machine, the operation upon each shoe stops automatically after the machine has performed its operations successively upon different portions of the shoe; that is, at a predetermined time in the cycle of the machine's operations upon a given shoe the operation upon that shoe stops and the shoe is presented in a position for its convenient removal by the operator and the application of another shoe to be operated upon by the machine.

*Cross-Int.* 328. Then, if I understand you, in the operation of the machine referred to, after the driving mechanism has revolved a certain number of times the machine stops; am I correct in my understanding?

*Ans.* No, sir.

*Cross-Int.* 329. What makes the machine stop, or, in other words, is the stopping of the machine dependent upon the condition of the sole being operated upon, or is it dependent upon the number of operations performed by the machine on the sole?

*Ans.* The machine itself does not stop at the completion of the operation upon a given shoe. It would be more correct to state that the operation upon that given shoe stops. The stopping of the operation upon each shoe takes place after the machine has operated automatically in a predetermined way upon that shoe.

*Cross-Int.* 330. Perhaps we can get at it in this way: as I understand you, the leveling rolls that come in actual contact with the sole operate a certain number of times on a certain sized type and kind of shoe; am I right?

*Ans.* Perhaps that is correct in that one leveling roll operates upon one shoe once. During its operation upon that shoe it is continuously in engagement with the shoe, being vibrated rapidly over each portion of the sole successively, and automatically tipping as required to adapt it according to the varying face contour desired for each portion of the sole of the finished shoe.

*Cross-Int.* 331. And does the roll operate upon a soft sole a different number of times than it operates on a hard sole of the same size and shape?

*Ans.* No, sir; that condition is provided for by convenient adjustment to vary the amount of pressure.

*Cross-Int.* 332. Approximately, how long does it take to operate upon one sole with the machine referred to?

*Ans.* I do not remember that I have timed the operation of the machine, and should prefer to do that before stating the time required for one shoe. I should add, however, that the time required for each shoe would, of course, vary with the speed at which the machine was run.

*Cross-Int.* 333. Well, supposing you had a dozen pairs of shoes all of the same size and kind, some of them having soft soles and some of them having hard soles, the machine being operated on all without change of adjustment: then would the time employed in the operation on each of the soles be the same?

*Ans.* The conditions stated in the question are not the commercial conditions under which this machine operates in shoe factories. The machine is generally used in shoe factories on regular work in which a large number of shoes substantially alike as regards the quality of their soles are presented successively to the operation of the machine. As explained in my previous testimony in open court, it is not customary to level on this Goodyear automatic leveling machine either freak shoes or sample shoes.

Mr. WEBSTER. Answer objected to as not responsive, and evasive.

*Cross-Int.* 334. Does the condition of the sole as to hardness or softness have anything to do with the automatic stopping of the portion of the machine which operates on the sole?

*Ans.* Yes, sir, in that the machine is organized to level the sole properly, and when it has done that its operation on that sole stops.

*Cross-Int.* 335. So that if a soft sole is presented to the machine immediately after a hard sole has been operated upon, and there has been no change in the adjustment of the machine, the time of the stopping of the portion of the machine operating on the soles differs; is that correct?

*Ans.* No, sir.

*Cross-Int.* 336. Would the time expended in operating on the two soles referred to in the previous question be the same?

*Ans.* Yes, sir.

*Cross-Int.* 337. Now, inviting your attention to your direct examination with reference to pegging machines, you say, among other things, that prior to February, 1899, pegging machines were used exclusively for attaching soles of boots or shoes by means of wooden pegs, and that the pegging machine of patent No. 555,434, February 25, 1896, was the first patent on what has since been known as a horn pegging machine, and that prior to the machine illustrated in the patent referred to it had been the universal practice in pegging shoes to insert the pegs while the last was still in the shoe; do you still adhere to that expression of your opinion of the art?

*Ans.* Yes, sir.

*Cross-Int.* 338. You also stated that this machine, referring to the Davey machine of patent of February 25, 1896, represented a great advance in the art over the prior machines, and, as I understand your testimony, that the horn tip of the Davey pegging machine of that patent first made it possible to peg shoes with a horn instead of a wooden last; do you still adhere to that statement?

*Ans.* Yes, sir.

*Cross-Int.* 339. Had you, at the time of testifying with reference to the pegging machine looked into the prior art with reference to pegging machines provided with horn tips for the purpose of pegging without the employment of lasts in the machine?

*Ans.* I have had occasion to become somewhat familiar with the prior art in this connection.

*Cross-Int.* 340. And at the time of testifying were you familiar with the patent of Sturtevant and Bickford, dated February 15, 1897, No. 173,428, a copy of which I now hand you?

**Mr. PHILLIPS.** Question objected to as having no bearing on any matter touched upon in the direct examination of this witness, and being immaterial to any issue under the order of the court submitting this case to be heard by this examiner, and as being improper cross-examination.

*Ans.* Yes, sir.

*Cross-Int.* 341. Were you also familiar with, and had you exam-

ined, and did you understand, the various constructions set out in the following patents:—

Allen, channel cutting machine, February 19, 1889, No. 398,305 ;  
Scott, sewing machine, October 19, 1880, No. 233,561 ;  
Carey, machine for uniting soles and uppers, January 6, 1891,  
No. 444,126 ;

Carey, machine for uniting soles and uppers of boots and shoes,  
March 26, 1895, No. 536,183 ;

Ley, pegging machine, March 7, 1893, No. 492,906 ;  
copies of which I now hand you ?

Mr. PHILLIPS. Question objected to as having no bearing on any subject-matter opened upon the direct examination of this witness, as being improper cross-examination, and further objected to as immaterial to any issue triable before this examiner under the order of the court.

Ans. I cannot state that I have examined any constructions set out in the patents referred to, but I was familiar with the patents. As I recall these patents, only one of them relates to a machine for inserting wooden pegs. That is patent No. 492,906, March 7, 1893, Ley. The Allen patent, No. 398,305, and the Scott patent, No. 233,561, relate to sewing machines ; and the two Carey patents, Nos. 444,126 and 536,183, relate, as I recall them, to "machines principally used for securing together soles and uppers of boots and shoes or for attaching the uppers thereof and stitching harness, belting, and the like, by a seam composed of a continuous thread of wire in loops and short lengths of wire or other like material inserted in the same ". (Specification of Carey patent No. 536,183, page 1, lines 12 to 19.)

As regards the Ley patent No. 492,906, March 7, 1893, as well as the Sturtevant and Bickford patent 173,428, February 15, 1876, the latter of which was inquired about in the preceding question, these patents serve to indicate that during a period of at least twenty years preceding the production of the first type of Davey horn pegger, the desirability of pegging shoes "off the last" and avoiding the great expense explained in my preceding testimony, was fully recognized. So far as I know, no machines constructed

as shown in either of these patents were ever put into commercial use, and, as I have previously stated, the first commercially successful horn pegging machine, that is, the first machine for pegging shoes "off the last", was the machine embodying the construction set forth in patent No. 555,434, February 25, 1896, Davey.

[*Patents shown to the witness are offered in evidence in one volume, and are marked "Plaintiff's Exhibit 262".*]

Mr. PHILLIPS. The introduction of these patents is seasonably objected to on the ground that they are improperly offered on the cross-examination of this witness and are of no materiality to any issue triable before this examiner under the order of the court.

*Cross-Int.* 342. Were you aware at the time of testifying, or are you now aware, that the patent to Davey No. 555,434, dated February 25, 1896, pegging machine, had been passed upon and construed by the court?

*Ans.* Yes, sir, I was aware of the fact at the time I testified.

*Cross-Int.* 343. And were you familiar with the decision in the case of *Davey Pegging Machine Company v. Isaac Prouty & Company et al.*, reported in 96 Fed. Rep., page 336?

*Ans.* I have been familiar with the decision, although my attention has not been called to it for several years.

*Cross-Int.* 344. And also with the decision in the same case in the Court of Appeals, reported in 107 Fed. Rep. 505?

*Ans.* My preceding answer will apply to this question.

*Cross-Int.* 345. Do you know whether Isaac Prouty & Company were in business prior to 1899?

Mr. PHILLIPS. Objected to as improper cross-examination, referring to no matter brought out in the direct examination of this witness.

*Ans.* I think they were.

*Cross-Int.* 346. And do you now say that it is not clearly shown in the Sturtevant and Bickford patent of 1876 that the machine therein shown was adapted to drive pegs and cut off their ends inside the shoe, and without the employment of a last?

Mr. PHILLIPS. Question objected to as relating to no matter re-

ferred to in the direct examination of this witness and pertinent to no issue triable before this examiner.

*Ans.* I have not made such a statement and do not make it now. I have stated, and repeat, that, so far as I know, no machines were constructed and commercially used as illustrated in the Sturtevant and Bickford patent No. 173,428, although, as I have previously stated, that patent serves to indicate that as early as 1876 the desirability of pegging shoes "off the last" was recognized.

Mr. WEBSTER. All that portion of the answer after the words "I have not made such a statement and do not make it now" is objected to as not responsive, and evasive.

*Cross-Int.* 347. Is it your understanding that the claims of Davey patent No. 555,434, dated February 25, 1896, which patent has been referred to by you in your direct testimony, go broadly to a pegging machine wherein the projecting ends of the pegs are cut on the inside of the shoe at or about the same time they are driven?

Mr. PHILLIPS. The same objection.

*Ans.* No, sir; I should not give that construction to the claims, but should like to add that I understand that those claims are directed to the organization of the first practically successful machine for pegging shoes "on the horn".

Mr. WEBSTER. All that portion of the answer after "No, sir" is objected to as non-responsive, and evasive.

*Cross-Int.* 348. You say in one of your answers that according to Mr. Davey's records the machine at the Whitman factory is No. 76; when did you examine Mr. Davey's records?

*Ans.* Within two or three weeks before the day on which I made that statement in my testimony.

*Cross-Int.* 349. Where did you examine Mr. Davey's records?

*Ans.* In my office.

*Cross-Int.* 350. From whom did you procure them?

*Ans.* From Mr. Davey and a Mr. Hope, who was associated with Mr. Davey at the time that the pegging machine in question was sold to the Commonwealth Shoe & Leather Company.

*Cross-Int.* 351. Are the Davey records now in your possession?

*Ans.* No, sir.

*Cross-Int.* 352. Can you procure them and produce them here for examination and verification?

**Mr. PHILLIPS.** I instruct the witness that it will be unnecessary for him to procure such records until instructed so to do by counsel or by the court.

*Ans.* It will involve considerable inconvenience to obtain and produce the records to which I have referred, and I should prefer not to do so unless instructed by counsel or by the court.

*Cross-Int.* 353. Did you not know at the time you testified that you had no right to rely upon records and testify as to the same without producing such records in court?

*Ans.* I attached little importance to the number of the Commonwealth Shoe & Leather Company machine because I believe all of the machines supplied by John F. Davey embodying the mechanism of patent No. 555,434, February 25, 1896, were alike. I mentioned that number merely to indicate that the machine was apparently constructed at about the same time as the machine No. 79, which I had photographed, and photographs of which were introduced in evidence as Defendants' Exhibits Nos. 126 and 127. As a matter of fact, I consider the number of the machine at the Commonwealth Shoe & Leather Company's factory as immaterial, since I have testified as to the identity of that machine and the machine shown in Defendants' Exhibits Nos. 126 and 127.

**Mr. WEBSTER.** Answer objected to as not responsive, and evasive.

*Cross-Int.* 354. You also testified that the photograph which you produced of the machine at the Whitman factory showed accurately the machine as it was sold to the Commonwealth Shoe & Leather Company by Mr. Davey in 1895. Did you get any of that information from the Davey records?

*Ans.* I did not testify that the photograph of Defendants' Exhibit 126 was a photograph of the machine at the Whitman factory. I testified that it was a photograph of machine No. 79 and that I compared it with the machine at the Whitman factory. The ground for my testimony, therefore, was my personal examination

of the machine at the Whitman factory as well as of machine No. 79.

Mr. WEBSTER. Answer objected to as not responsive, and evasive.

*Cross-Int.* 355. You say: "The horn which was then on the machine and which is shown in this photograph is not now on the machine." Have you any personal knowledge as to what horn was on the machine in 1895?

*Ans.* I have every reason to believe that the horn which was on the machine in 1895 was the horn which was on a bench near the machine in the Whitman factory, or a horn like that such as was a part of machines like this as sold by Davey in 1895.

Mr. WEBSTER. Answer objected to as not responsive, and evasive.

*Cross-Int.* 356. You have testified that the five Chase lasters at Jones' factory were being used only for long-legged boots. Do you mean by that statement that they were used only for long-legged boots while you were present, or do you mean that they had not been used for any period of time on anything other than long-legged boots?

*Ans.* I meant that the machines were fitted for lasting long-legged boots, and that they were all being used for lasting long-legged boots while I was in the factory.

*Cross-Int.* 357. Reference has been made in your direct examination to a machine called the Amazeen skiver, and I note at one point in your testimony you refer to prior types of machines, and among other things you say that patents at that time had expired on these two machines. In view of the fact that this testimony is scattered through the record, will you kindly now briefly state what patents on vamp skivers and Amazeen skivers, so called, were known to you existing in the prior art running back ten or fifteen years prior to 1899, and whether machines constructed as set forth in that patent were put out, and, if so, by whom, and approximately to what extent they were used, so far as you are informed? Please note I do not ask for an extended discussion of

this matter, but desire at this point to get the facts on the record briefly.

*Ans.* I have not at hand copies of patents which I need to have before me in order to answer the question in reference to machines of the type shown in Plaintiff's Exhibit 192, which is a cut of the Carver vamp-skiving machine adapted for skiving heavy vamps and box toes, but I have before me copies of patents on the Amazeen skiving machine and will accordingly answer the question so far as I am now able by giving the information requested in regard to the Amazeen skiving machine.

As stated in my previous testimony relating to this machine, officially known as "Skiving Machine, Amazeen", the first patent of which I am aware disclosing that type of skiving machine is No. 200,682, February 26, 1878, Amazeen. The next patent is No. 220,906, October 28, 1879, Amazeen, and the first commercial skiving machine of which I am informed was constructed substantially as is shown in that patent No. 220,906. The machine of that patent has, of recent years, been designated as "Model No. 1".

The next step in the development of the Amazeen skiving machine is illustrated in patent No. 273,931, March 13, 1883, Amazeen. The machines which are now known as model No. 2 and model No. 3 were constructed substantially as shown in that patent No. 273,931, the differences between the two models being differences in mechanical construction.

The machine now known as model No. 4 was constructed substantially as shown in patent No. 518,774, April 24, 1894, Bayley. Model No. 5 was a step in the development from the preceding models, which resulted in model No. 6, which is the machine illustrated on page 132 of Plaintiff's Exhibit 190, being United Shoe Machinery Company's catalogue of 1902. All of the models preceding this model No. 6 are no longer manufactured, and have not been manufactured for some years. This model No. 6 is constructed substantially as shown in patent No. 645,381, March 13, 1900, Bayley, and No. 636,942, November 14, 1899, Bayley.

The present commercial Amazeen skiving machine is known as

model No. 7, and is constructed substantially as shown in patents No. 823,578, June 19, 1906, Bayley, and No. 823,586, June 19, 1906, Davenport.

*Cross-Int.* 358. Kindly state by whom the machines of the earlier patents referred to by you were put out, and the extent of use, approximately, so far as you know.

*Ans.* The machines were put out in succession by Christopher Amazeen, the Amazeen Machine Company and the United Shoe Machinery Company. Each of the models preceding model No. 7, to which I have referred, was in turn the standard commercial machine for several years, until it was superseded by the next succeeding model. As stated in my previous answer, the present standard commercial machine is model No. 7.

*Cross-Int.* 359. Do you know whether any of the models 1, 2, 3 and 4 are now in use?

*Ans.* I think that none of the models 1 or 2 is in use, but there are some model 3 machines still in use. I think, however, that most, if not all, of the No. 3 model which are still in use have been equipped with the improvements of patent No. 452,996, May 26, 1891, Dunham.

*Cross-Int.* 360. Kindly state whether any of the exhibit shoes thus far introduced by the defendant are shoes of the kind you have referred to in your testimony as "freak shoes"?

*Ans.* On examining the shoes which have been put in evidence as exhibits by the defendants, I do not find any which I regard as "freak shoes".

*Cross-Int.* 361. Are any of the lasts which have been introduced by the defendants lasts adapted for the manufacture of freak shoes?

*Ans.* The Tokio last of Defendants' Exhibit No. 133, and the razor-toe last of Defendants' Exhibit No. 134, and possibly the cottage toe last of Defendants' Exhibit 132, would be regarded as freak lasts today, although they were regularly and extensively used about fifteen to eighteen years ago.

*Cross-Int.* 362. In your testimony in chief you made reference to lasting machines adapted peculiarly, as I recollect your statement, for the lasting of freak shoes. Will you briefly explain what

particular type of shoe or shoes you had reference to in using the term "freak shoes"?

*Ans.* I shall be obliged to ask you to refer me to the testimony to which you refer. I do not recall that I have testified in regard to any lasting machines peculiarly adapted for the lasting of freak shoes.

*Cross-Int.* 363. Do you recollect testifying that certain lasting machines were used principally for the making of sample and freak shoes?

*Ans.* No, sir. I have, however, testified that the Acme leveling machine was used for leveling freak and sample shoes in factories where the regular work was done on the Goodyear automatic leveling machine.

*Cross-Int.* 364. Now, will you kindly explain what kind of shoes you referred to when you spoke of "freak shoes"?

*Ans.* I had reference to shoes made on lasts having exaggerated or extreme lines. I have a number of such shoes in my office which I shall be glad to produce by way of illustration.

*Cross-Int.* 365. In your direct testimony you said, among other things: "Machines known as McKay & Copeland lasting machines were put out for many years prior to 1899." Will you at this point kindly state whether the McKay & Copeland lasting machines referred to by you were put out as early as 1890, and if put out as early as that date, or earlier, state, so far as you are able, when and by whom?

*Ans.* The McKay & Copeland lasting machine about which I have previously testified is the present standard commercial McKay & Copeland lasting machine adapted and used exclusively for very heavy shoes, such as brogans, as illustrated in Defendants' Exhibit 143. That machine without the improvements which have subsequently been adopted was first put out about 1897. Prior to that time there had been put out for many years a machine which, in the successive stages of its development, beginning in 1882, had been known as the McKay & Copeland lasting machine. Prior to 1882 the predecessor of that machine, known as the Copeland lasting machine, had been put out for some two or three years. This

Copeland lasting machine was put out by the Copeland Lasting Machine Company, and the machine which in its earlier form was put into commercial use in 1882 was put out in its successive improved forms until its reorganization in 1895 and 1897 by the McKay & Copeland Lasting Machine Company.

*Cross-Int.* 366. If you have before you the patents under which the early machines referred to by you were manufactured, will you kindly read the number, date, title and name of patentee in the record at this point?

*Ans.* The earlier machines to which I have referred, that is, the machines which were put out before the reorganization of the McKay & Copeland machine in 1895 and 1897, were constructed as shown or embodied mechanisms set forth in the claims of the following patents:—

Patent No. 191,937, June 12, 1877, Copeland, Woodward and Brock, reissued as No. 8,138, March 26, 1878.

Patent No. 197,607, November 27, 1877, Copeland, Woodward and Brock.

Patent No. 208,156, September 17, 1878, Copeland, Woodward and Brock.

Patent No. 90,651, June 1, 1869, Fischer.

Patent No. 231,076, August 10, 1880, McKay and Fairfield.

Patent No. 251,430, December 27, 1881, Glidden.

Patent No. 286,898, October 16, 1883, Brock.

Patent No. 193,446, July 24, 1877, Hatch, reissued as No. 8,764, June 17, 1879.

Patent No. 254,617, March 7, 1882, Copeland and Brock.

Patent No. 286,898, October 16, 1883, Brock.

Patent No. 288,689, November 20, 1883, Brock.

Patent No. 302,885, August 5, 1884, Brock.

Patent No. 371,816, October 18, 1887, Brock.

*Cross-Int.* 367. In your examination in chief you have referred, to a considerable extent, to the change in machines for the manufacture of shoes growing out of the manufacture by machinery of extension edge shoes, which, as I understand your testimony, occurred somewhere about 1895. Do you wish to be understood

as saying that when the extension edge shoes came into more extensive use the machines previously employed and which were not adapted for the manufacture of extension edge shoes became obsolete and were abandoned?

*Ans.* Yes, in one case; while in another case the organization of the machine previously used was modified to adapt the machine for operation upon extension edge shoes.

*Cross-Int.* 368. Please explain what you meant in your last answer when you said: "Yes, in one case".

*Ans.* The Briggs rounding machine was not adapted for use on extension edge soles and was superseded by the machine now known as "Rounding and Channeling Machine, Goodyear Universal".

*Cross-Int.* 369. Kindly explain what you mean in your last answer but one when you used the phraseology: "while in another case the organization of the machine previously used was modified to adapt the machine for operation upon extension edge shoes".

*Ans.* I referred to the machine now known as "Lockstitch Machine, Goodyear Outsole Rapid", which has been usually referred to in the testimony before the examiner as the Goodyear out-sole lockstitch machine of 1899.

*Cross-Int.* 370. Have you any statistics, which you consider reliable, giving the number of shoes having extension edge soles manufactured in the United States covering any period of years, also shoes without extension edges?

*Ans.* No, sir, I have not such statistics, but made inquiries recently which led me to the conclusion that nearly all men's and women's welt shoes which have been manufactured for at least five or six years were made with extension edge soles.

*Cross-Int.* 371. Kindly state your source of information.

*Ans.* The inquiries were made through the branch offices of the United Shoe Machinery Company located in the leading shoe centres and through the company's employees connected with those offices who have been, during that period, most familiar with the work being done from day to day in shoe factories making welt shoes.

*Cross-Int.* 372. Can you specify in what factories the inquiry was made?

*Ans.* I did not state that inquiries were made in any factories.

*Cross-Int.* 373. Then the information does not come from factories; is that correct?

*Ans.* The information comes from men whose duties in the care of machines used in factories throughout the United States in the manufacture of welt shoes have kept them in constant touch with the work being done in those factories from day to day during the period referred to.

*Cross-Int.* 374. And the men referred to in your last answer from whom the information was obtained are employees of the United Shoe Machinery Company, are they not?

*Ans.* Yes, sir.

[*Adjourned to 10 o'clock A. M., Wednesday, November 5, 1913.*]

BOSTON, MASS., November 5, 1913.

*Cross-Int.* 375. If you now have the data as to the insole channelling machine illustrated on page 95 of Plaintiff's Exhibit 220, as to whether the device illustrated on said page 95 is the subject-matter of any patent, and, if so, what patent, and as to the period of time the Goodyear out-sole channeler was active, kindly now answer the question.

*Ans.* The earliest date which I have been able to ascertain when the turn and insole channeling machine illustrated on page 95 of Plaintiff's Exhibit 220, being Goodyear Shoe Machinery Company's catalogue of January 1, 1897, was commercially used in the manufacture of shoes, is 1876, although the machine may have been put out for a year or two before that year. The machine as it was then put out was, I am advised, constructed substantially as shown in patent No. 143,237, September 30, 1873, Hadley. The machine of the Hadley patent, with such changes as brought it into the form shown on page 95 of Plaintiff's Exhibit 220, was used until the machine was reorganized about 1894 by incorporating in it the improvements shown in the drawings and set forth in the claims of patent No. 550,402, November 26, 1895, Beckman,

which improvements have been discussed in detail in my previous testimony relating to channeling machine, Goodyear (insole and turn).

The first shipment of the Goodyear out-sole channeler of which I have obtained definite information was in 1879, although I am confident that the machine was used for probably two or three years before that date. The machine was used until it was superseded about 1891 by the Briggs rough rounding machine.

*Cross-Int.* 376. Is it not a fact that heels were attached to shoes by machinery as early as 1885?

*Ans.* Yes, sir; heels were attached by machinery as early as 1867.

*Cross-Int.* 377. Is it not a fact that heels were compressed by machinery as early as 1885?

*Ans.* Yes, sir; heels were compressed by machinery as early as 1871.

*Cross-Int.* 378. Will you please very briefly explain the difference between surface nailing of heels and blind nailing?

*Ans.* As I have previously explained in detail, when heels are "surface nailed" the heel-attaching nails are driven through the entire heel, including the top-lift, so that the head ends of the attaching nails are substantially flush with the tread face of the top-lift and are visible in the finished shoe. When heels are "blind nailed" the top-lift is not secured to the body of the heel when that is attached to the shoe. In attaching the body of the heel to the shoe the head ends of the nails are left projecting above the outer face of the heel and then the top-lift is attached to the body of the heel by "spanking" it upon the head ends of the nails, that is, the top-lift is attached to the body of the heel by forcing the head ends of the nails into its inner side by pressing the top-lift upon them. In a blind-nailed heel the head ends of the heel-attaching nails are not visible in the finished shoe.

*Cross-Int.* 379. Is it fair to say that the distinguishing characteristic generally stated between a loose-nailing machine and other nailing machines is that in a loose-nailing machine the nails are in

a hopper or reservoir in a loose condition and the machine gathers them up and arranges the nails for proper feeding to the machine?

*Ans.* No, sir, I think it would not be fair to state the distinguishing characteristic in that way.

*Cross-Int.* 380. Will you give the names of the four or five inventors who were put to work to adapt the Plant improvements for the model G welt and turn sewing machine which you say was at that time, in 1910, the standard commercial machine of the United Company?

*Ans.* Among them were the following inventors: Laurence E. Topham, Andrew Eppler, Ralph C. Simmons, E. E. Winkley, William C. Stewart, Albert Latham.

*Cross-Int.* 381. Can you now state the number of welt and turn machines which have been put out by the United Company or its subsidiary company, the United Shoe Repairing Machine Company, among cobblers in the United States up to December 1, 1911?

*Ans.* No, sir: I have not that data at hand, but shall be glad to get it.

*Cross-Int.* 382. Kindly do so and at the same time get the same information with reference to rapid out-sole lockstitch machines.

*Ans.* Yes, sir.

*Cross-Int.* 383. What became of the Eppler welters and stitchers taken over by the United Company from the Eppler Company?

Mr. PHILLIPS. Question objected to as relating to no matter touched upon in the direct examination of this witness and as the witness cannot be assumed to have any personal knowledge of the matter.

*Ans.* Such welters and stitchers taken over by the United Company from the Eppler Company as were in the hands of shoe manufacturers were retained and used by those manufacturers until the manufacturers displaced them by Goodyear machines. Such machines as were taken over from the Eppler Company by the United Company as were not in the hands of shoe manufacturers were kept on hand to supply demands for such machines from shoe manufacturers. It is my recollection that about forty of the

Eppler welters were supplied to shoe manufacturers during the first year or two after the United Company was formed.

*Cross-Int.* 384. Did the United Company manufacture Eppler welters and stitchers?

Mr. PHILLIPS. Objected to as relating to nothing referred to in the direct examination of this witness and as the witness cannot be assumed to have any personal knowledge of the matter.

*Ans.* I could not be sure about that without looking it up. I think it quite likely, however, that the United Company was able to supply such small demand as there was for those machines by supplying rebuilt machines which had been returned by shoe manufacturers.

Mr. WEBSTER. Answer objected to as not responsive.

*Cross-Int.* 385. So far as you know at the present time, the United Company did not manufacture Eppler welters and stitchers, did it?

Mr. PHILLIPS. Question objected to as improper cross-examination, relating to no matter touched upon in the direct examination of this witness.

*Ans.* I don't know.

*Cross-Int.* 386. Do any of the patents you have discussed in your deposition in chief have reference to the construction shown in the Eppler welters and stitchers?

Mr. PHILLIPS. Question objected to as improper cross-examination because it relates to no matter referred to in the direct examination of this witness.

*Ans.* The only patent which I recall having mentioned in my testimony in chief relating to welters or stitchers which was acquired by the United Company from the Eppler Company is patent No. 507,873, October 31, 1893, Arnold.

*Cross-Int.* 387. Have you in mind, or have you a memorandum of, any other patents relating to the Eppler weler or stitcher; and, if so, will you kindly give the number, date and title?

Mr. PHILLIPS. Question objected to as improper cross-examination because manifestly relating to no matter touched upon by this witness in his direct examination, and the witness is instructed

that he is under no obligation to answer the question unless instructed so to do by counsel or by the court.

*Ans.* Under instructions of counsel, I decline to answer the question.

*Cross-Int.* 388. Pardon me, but I call your attention to the fact that I do not understand you have been instructed to decline to answer the question. Do you decline to answer?

*Mr. PHILLIPS.* As at present advised, I instruct the witness not to answer the question unless ordered to do so by the court.

*Ans.* Under instructions of counsel, I decline to answer the question.

*Cross-Int.* 389. Kindly give the date when you first went with the firm of Fish, Richardson & Storror.

*Ans.* December 1, 1895.

*Cross-Int.* 390. Kindly give the date when you first became associated with the McKay Shoe Machinery Company.

*Ans.* September 1, 1898.

*Cross-Int.* 391. And then, as I understand you, you became associated with the United Shoe Machinery Company in February, 1899?

*Ans.* Yes, sir.

*Cross-Int.* 392. And your first connection with shoe machinery of any kind was after your connection with the firm of Fish, Richardson & Storror; is that correct?

*Ans.* That is substantially correct.

*Cross-Int.* 393. You have testified at considerable length with reference to slugging machines, and in connection with such testimony you made reference to a considerable number of patents, the earliest of which seems to be May 11, 1897. Will you kindly state if you know of patents on slugging machines of a date earlier than said patent referred to?

*Ans.* The first patent of which I am aware which discloses a slugging machine is patent No. 410,927, September 10, 1889, Robinson and Watt. Prior to 1888 or 1889 heel slugging was universally done by hand.

*Mr. WEBSTER.* All that portion of the foregoing answer begin-

ning with and following "Prior to 1888" objected to as not responsive.

*Cross-Int.* 394. Would it be proper to say that a slugging machine is included in the general term of metallic fastening machines?

*Ans.* I think so.

*Cross-Int.* 395. And a slugging machine is a machine that is usually employed to drive metallic slugs into the heel, is it not?

*Ans.* Yes, sir; that is, into and through the top-lift and one or two adjacent lifts of the heel.

*Cross-Int.* 396. In your direct examination you testified under objection with reference to certain machines put out by the United Shoe Machinery Company which do work always done by hand in 1899, or not done at all either by hand or machine in 1899, and I now ask you *de bene* and without waiving objection to the question or the answer if you will kindly point out which of the machines in the list spread upon the record by you do work not done at all either by hand or by machine in 1899?

*Ans.* Clinch machine, Universal double, attaches soles in a novel manner and by means of a novel fastening which had never been used for attaching soles at the time the machine was introduced.

Eyeletting machine, Duplex, was the first machine which set two eyelets on opposite sides of an upper simultaneously.

Embossing machine, Goodyear heel, performed an operation which, so far as I know, had never been performed either by hand or by machine before that machine was introduced.

Lasting machine, staple, was a machine which, so far as I am advised, performed the lasting of the shoe and securing it in place in a manner in which that work had never been done before.

Stapling machine, Goodyear upper, also performed an operation which, prior to the introduction of that machine, had not before been performed either by hand or by machine.

Stitching machine, Economy insole, is another machine which performed an operation never performed either by hand or by machine before that machine was produced.

Mr. WEBSTER. This closes the cross-examination of the witness as counsel is at present advised, unless through inadvertence, acci-

dent or mistake counsel has omitted to inquire of the witness, and except as to the matters with reference to which the witness is to produce data, and excepting as to matters to which the witness has refused to make answer, and counsel reserves the right to go into these matters at a later period if permitted by the court or if opposing counsel shall withdraw their instructions to the witness with reference to such answers.

[*Adjourned to 10 A. M., Thursday, November 6, 1913.*]

BOSTON, MASS., November 6, 1913.

*Direct Examination resumed by Mr. PHILLIPS.*

*Int. 397.* Have you the data called for by counsel for the United States in regard to the number of welters and stitchers of the United Company in use by cobblers?

*Ans.* I was requested to ascertain and state the number of welt and turn machines which have been put out by the United Company or by the United Shoe Repairing Machine Company among cobblers in the United States up to December 1, 1911. I find that no welt and turn machines have been supplied either by the United Company or by the United Shoe Repairing Machine Company to cobblers, that is, to those engaged exclusively in the business of repairing shoes. I should add, however, that the United Company has supplied welters to twelve different shoe manufacturers who do some shoe repairing in connection with their regular business of manufacturing shoes. I cannot state whether those welters are used by such manufacturers in their repairing work.

I was also requested to obtain similar information in regard to out-sole lockstitch machines. I find that on December 1, 1911, the United Shoe Repairing Machine Company had put out for use by cobblers 961 out-sole lockstitch machines. In addition to those machines, the twelve shoe manufacturers who also do some repairing work, to whom I referred in the preceding paragraph, have out-sole stitchers which were supplied to them by the United Shoe Machinery Company.

*Int. 398.* In a cross-interrogatory counsel for the United States referred to a list of machines which was read into the record by

you in your direct examination, and you were asked in substance if you testified that "all the machines specified in that list" were necessary for the successful manufacture of shoes. Will you please state what machines, if any, are necessary for the manufacture of a welt shoe, what for a turn shoe, and what for a McKay shoe? Please state what advantage is secured by the use of modern machinery in the manufacture of shoes.

Mr. WEBSTER. Question objected to for that it calls for matter fully gone into in the direct examination.

*Ans.* A welt shoe requires no machine for its proper manufacture, and in fact welt shoes were made by hand long before machines were introduced for their manufacture. The turn shoe was also made by hand long before there were machines adapted for use in its manufacture. A McKay sewed shoe is in part essentially a machine-made shoe, since that term is used to designate shoes the soles of which have been attached by the use of the McKay sewing machine. McKay sewed shoes were, however, manufactured in large numbers some years before the first lasting machine was put into commercial use, and aside from the McKay sewing machine no machine is required for the manufacture of a McKay sewed shoe.

The advantage gained by the use of modern shoe machinery in the manufacture of shoes is a decrease in the cost of production, and, since the latest types of shoe machines have been introduced, an improvement in the quality of the work. I do not wish to be understood as testifying that a shoe can be made any better by machinery than by hand work, assuming that the hand workman was sufficiently skillful, took the amount of time necessary and gave enough care to produce perfect work, but I do wish to say that the average shoe made by modern machines is better than the average shoe which was made in shoe factories largely by hand processes prior to the introduction of modern machines.

This welt shoe, so called, is the most satisfactory construction known to the shoe-making art as regards comfort, durability, wear and the facility of repairing it, although in cases where extreme lightness and flexibility are required there are advantages

in the turn shoe. All the better grades of men's shoes are welt shoes, and all the better grades of women's shoes are either welt shoes or turn shoes. The difference in cost between hand-made shoes and shoes made by modern machine processes is a matter of such common knowledge that it hardly need be referred to, and the wearing qualities of a welt or turn shoe made by modern machine processes are superior to the wearing qualities of a welt or turn shoe as it would be made by hand under factory conditions; that is, the machine-made welt and turn shoes which are supplied to the public today are better shoes than they would be if they were made by hand, and of course they are much less expensive.

I will also state that the industry has been brought to such a point that the saving of a fraction of a cent in the manufacturing cost of a pair of shoes is of the greatest importance to shoe manufacturers, since in a factory of average capacity such a saving would amount to several thousands of dollars a year.

*Int. 399.* You have been interrogated by counsel for the United States in your cross-examination in regard to machines used for the ornamentation of shoes. Will you please state what, if any, importance the ornamentation of shoes is to the modern shoe manufacturer?

**Mr. WEBSTER.** Objected to for that the witness has not qualified in a manner to tend to show that he is competent to testify as to the importance of such matters to manufacturers, and as merely calling for the opinion of the witness, and, further, as calling for matter in no wise pertinent to the issues involved in this cause.

*Ans.* The neatness or finished appearance of a shoe often means the difference between the salability or the unsalability of a product, so that obviously the giving to the shoe of a slighty and pleasing appearance is of great importance to the modern manufacturer. The extensive introduction of American shoes into foreign markets, particularly into the English market, is largely due to their neater appearance.

*Int. 400.* Were the processes which have been referred to by you in your cross-examination as wholly or partly for the purpose

of ornamentation of sufficient importance to have been performed by hand prior to the introduction of machinery for that purpose?

*Ans.* Yes; I understand that all of those operations were formerly performed by hand, although I believe in no instance as effectively as they are now performed by machine.

*Int.* 401. You were asked on cross-examination whether the employment of a burnishing machine or of a blacking or polishing machine added to the wearing quality of a shoe, and whether the indenting and burnishing machine relates to anything but ornamenting a shoe. Please state whether there is anything that you wish to add to that portion of your deposition. If so, will you kindly state it?

*Ans.* In answering the questions about those machines I should have explained the important work which they do in protecting the shoe against the action of water and moisture. The burnishing operation performed upon the edge of the sole is known in the industry as "edge setting", while the burnishing operation upon the edge of the heel is known as "heel burnishing". Before these operations are performed the edge of the sole and the edges of the "lifts" of the heel are raw and porous, and if left in that condition would quickly absorb water when the shoe was worn and would even absorb moisture from the atmosphere. Referring first to the edge-burnishing or edge-setting operation, before that operation is performed the edge of the sole and the edge of the welt in a welt shoe are coated with blacking which contains about twelve per cent of wax. In the operation of the edge-setting machine this blacking is forced into the pores of the leather on the edge of the sole and the edge of the welt, fills up any crack which there may be between the sole and the welt, and when the operation is completed there is a thin film of wax on the combined edge of the sole and welt which effectively prevents the water or moisture entering the pores of the leather and penetrating between the sole and the welt. If the water entered the pores of the leather in the sole it would cause the sole to swell, and when it dried the sole and welt would, in the shrinking of the sole as it dried, pull away from each other or "check", as it is designated in the industry. This would allow

water and fine gravel to enter between the welt and sole, which would penetrate to the outseam and eventually to the inseam, and would result in damage to one or both of those seams, so that one or both would be likely to give way and the shoe come apart.

As to the practical advantages of the heel-burnishing operation, if this were not performed, water and moisture would enter the open pores of the edges of the heel lifts and would penetrate between adjacent lifts, which would cause the lifts to swell, with danger of forcing the top-lift off the heel. When the lifts shrunk or dried the heel would "check", that is, there would be cracks between adjacent lifts which, besides giving the heel an unsightly appearance, would expose it still more to the action of water and moisture, and soon the leather of the heel would rot and its wearing qualities become seriously impaired. It is the practice to burnish heels in one of two ways: either blacking is applied to the heel before the burnishing operation, which, like the blacking applied to the sole edge, as previously stated, contains about twelve per cent of wax; or the heel is first coated with blacking which does not contain wax and then in the burnishing operation clear melted wax is applied to the heel. As the result of a heel-burnishing operation by either of these methods, any cracks in the edge of the heel are filled up and a thin film of moisture-resisting wax is spread over the entire edge of the heel.

The indenting and burnishing machine operates upon a welt in the condition which is illustrated in the shoe which I now produce.

[*Fudge stitched shoe prior to wheeling and burnishing operation is introduced in evidence, and marked "Defendants' Exhibit 201".*]

MR. WEBSTER. The introduction of the exhibit is objected to as utterly immaterial.

[*Answer to 401 continued:*]

As explained in my previous testimony relating to "Wheeling and Burnishing Machine", an indenting and burnishing machine is used upon shoes which have been fudge stitched, that is, which have had their soles attached by a seam which is sunk in a slit formed in the upper surface of the welt as illustrated in Defendants' Exhibit No. 201. This slit in the welt, if it were not closed

up, would obviously collect water, sand and gravel, which would quickly rot and decompose the outseam. This danger is obviated by the successive use of the wheeling machine and the stitch-burnishing machine. Prior to the operations of those machines the upper surface of the welt is coated with blacking, which is applied to the upper face of the welt at the same time that it is applied to the sole edge, and, as previously explained, that blacking contains about twelve per cent of wax. By the two operations that are then performed upon the upper face of the welt, first a wheeling to form imitation stitch impressions, and secondly the burnishing of those stitch impressions by a rapidly reciprocating tool, the slit in the upper face of the welt is closed and the coating of blacking and wax effectively prevents any water or fine gravel from entering the slit. A further advantage of the wheeling and burnishing operations is that they tend to harden the welt and to crowd it down into firmer and closer contact with the sole, owing to the pressure exerted upon the welt by the wheeling and burnishing tools.

*Int.* 402. You were asked upon cross-examination, in substance, to explain how the employment of a beading machine adds to the wearing quality of shoes. Will you please consider your answer to this question, and if you desire to make any additions thereto, or corrections therein, will you please do so?

*Ans.* In my previous testimony I explained that after the upper and lining have been stitched together wrong side out the beading machine is used in the operation of turning the upper and lining right side out and in flattening the seam which unites the upper and lining, and I further stated that if the seam were not properly flattened by the beading machine it would not be as secure and there would be more danger of the seam ripping and the upper and lining coming apart. I should like to add to that answer, that after the upper and lining have been turned right side out and the seam has been hammered and flattened by the beading machine it is the universal practice to stitch the upper and lining together by another seam close to the edge of the lining and upper, the operation of so stitching the lining and upper being known in

the industry as the "second closing". That seam of course adds greatly to the security of the attachment of the upper and lining and insures against their coming apart. It would be entirely impracticable to sew the upper and lining together by this second seam if the first seam, made when the lining and upper were wrong side out, were not properly flattened after they had been turned right side out.

My previous answer was incorrect in the statement that it is the "universal practice" to stitch the upper and lining together wrong side out. Formerly a large majority of shoes, including nearly all women's shoes, were made in that way, but since I made the statement from which I have quoted I have learned that it is now the more common practice to fold the edge of the upper and the edge of the leather "stay piece" which forms the marginal portion of the lining, and then to stitch the upper and lining together right side out. When the upper and lining are sewed together in this manner it is not customary to use the beading machine.

*Int. 403.* You have been interrogated on cross-examination in regard to the "scouring machine". What operation on the edge of the heel follows that of the scouring machine to make the finished product, and what is the effect of the combined operations of the scouring machine and such later processes, if any, on the durability of the shoe?

*Ans.* In my answer to the second preceding question I explained how the heel-burnishing operation adds to the durability and contributes to the wearing qualities of the heel. The operation of the heel-scouring machine must be performed before a heel can be burnished. After the operation of heel trimming the shoe is left in the rough condition illustrated in the shoe which I now produce, in which the heel has been trimmed but has not been scoured.

[*Shoe showing heel after heel-trimming operation, and before heel-scouring operation, is introduced in evidence, and marked "Defendants' Exhibit 202".*]

[*Answer to Int. 403 continued:*]

The particular effect of the burnishing operation in protecting the heel from the action of moisture and water would be largely

defeated if the heel were burnished in this condition. I now produce the mate of the shoe of Defendants' Exhibit 202, the heel of which has been scoured and illustrates the smooth condition in which the heel is left after the heel-scouring operation.

[*Shoe with scoured heel is introduced in evidence, and marked "Defendants' Exhibit 203".*]

[*Answer to Int. 403 continued:*]

It will be observed that by the heel-scouring operation all the rough and fury edges in Defendants' Exhibit 202 have been removed and the heel edge is perfectly smooth. The heel of Defendants' Exhibit 203 is in perfect condition to receive the protecting coat of blacking and wax which is applied by the heel-burnishing operation, while the heel of Defendants' Exhibit 202 cannot be properly burnished until it has been scoured.

*Int. 404.* You have been interrogated in your cross-examination with regard to the introduction of new machines in the shoe manufacturing art, and displacement of former machines and appliances thereby. Please state what difficulties were met with, if any, by the United Company in the introduction of such machines, and what generally, so far as you know, is the difficulty, if any, attendant upon the introduction of new machines in the shoe manufacturing art.

Mr. WEBSTER. The question is objected to because of being general in its scope, not being limited to any particular field, and because it calls for matter in no wise pertinent to the issues involved in this cause, and therefore calls for matter which is immaterial, inadmissible and incompetent.

*Ans.* Operators who have run machines for years become very familiar with those machines, know exactly what they will do and are able to get from those machines the maximum amount of work of which the machines are capable. When such an operator begins to run a new machine which is radically different in its organization from the old machine he is entirely unaccustomed to the new machine and it frequently takes him a long time to become as familiar with the new machine as he was with the old machine; consequently it often requires a long period before such an operator

becomes sufficiently familiar with the new machine so that he can get from it the amount of work which he was getting from the old machine, and much less the increased output of which the new machine is capable. It often happens that an unskilled operator will learn to run a radically new machine more readily and more quickly than will an old operator who has been accustomed to an old type of machine for doing the same work. Accordingly, considerable opposition has been encountered by the United Company on the part of operators of old machines when the company has attempted to introduce new machines. It is further a fact that shoe manufacturers often partake to some extent of the prejudice of operators, and dislike to make a change in the machines which they are using for fear that such change may interfere with their business. Further, some manufacturers who are using a number of old machines for doing the same work dislike to make any gradual change, but prefer to postpone using any of the new machines until they can change all of the machines for doing that work which they have in their factories.

Mr. WEBSTER. Answer objected to because the same is more in the nature of argument and expression of opinion with reference to matters of which the witness has no personal knowledge, and it is therefore incompetent, inadmissible and immaterial.

*Int. 405.* You have been interrogated at some length in your cross-examination in regard to the Acme leveler and the Goodyear automatic leveler. Please state the relative amount of skill required upon the part of the operator of an Acme leveler and of a Goodyear automatic leveler, and also state the relative capacity of these machines and how many of each of these machines were put out by the United Company up to March 1, 1913.

Mr. WEBSTER. Question objected to because it does not yet appear that the witness has had any personal experience in operating the machines referred to in the question, and because the question calls for matters occurring since the filing of the bill.

*Ans.* The automatic leveling machine requires no skill on the part of the operator. The machine is adjusted to impart a predetermined shape to the bottom of the sole of a shoe without any

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interference on the part of the operator. The successful operation of the Acme leveling machine, on the other hand, depends entirely upon the skill and judgment of the operator, because the relative inclination of the leveling roll and the sole in the operation of the roll on every point of the sole is determined manually by the operator, and the extent of the inclination depends entirely upon his skill and judgment. If his skill or judgment fails, the operation will not be performed properly. Accordingly, the automatic leveling machine can be operated by an unskilled workman or by a boy, while the Acme leveling machine requires a skilled workman for its successful operation. The capacity of the automatic leveling machine is about twice that of the Acme leveling machine.

As to the number of each of these machines which have been put out by the United Company up to March 1, 1913, the end of the company's last fiscal year, 1033 of the automatic sole leveling machines have been put out, while prior to that date 145 of the Acme leveling machines had been put out. During the year ending March 1, 1913, nine Acme levelers were supplied to manufacturers, while ninety-eight of the automatic levelers were put into shoe factories.

**Mr. WEBSTER.** Answer objected to for the reasons given in objecting to the question, and especially all reference to anything occurring after the date of the filing of the bill herein is objected to as utterly incompetent, inadmissible and irrelevant.

*Int.* 406. You have been cross-examined at some length in regard to the looper heater on the Goodyear welt and turn machine of 1899. Will you please describe the construction of the looper heater of that machine, and state whether or not the decision to which your attention was called on cross-examination alters in any way any opinion which you have expressed with regard to the relation of such construction to the subject-matter of any United States Letters Patent?

*Ans.* The "heated block or plate" which is an element of the claim of patent No. 561,386, June 2, 1896, French, is in the commercial welt and turn swing machine of 1899 a thin composition casting made of copper and zinc. Accordingly this plate may be

easily bent so that the looper carrier will not, in its movement, be put into actual physical contact with the heated plate. When the plate has been so bent, however, it may easily be bent back into its proper position so that the looper carrier will engage it at each operation of the machine; and, however that may be, a welt and turn sewing machine of the 1899 type which is provided with such a plate is always capable of operating as called for by the claim of the French patent No. 561,386. So far as I can see, the decision of the Circuit Court of Appeals for the First Circuit in United Shoe Machinery Company *v.* Greenman, to which decision my attention was called on cross-examination, has no bearing upon my previous testimony in regard to this French patent No. 561,386. That decision merely held that a construction comprising "a spring support keeping the heated block constantly in contact with the looper carrier throughout the movement of the looper carrier" (146 Fed. Rep., page 760) did not infringe the claim of the French patent in question, which calls for "means to move said carrier to put it in contact intermittently with the said heated block or plate".

*Int.* 407. In your cross-examination you were asked in regard to the automatic leveler: "Does the condition of the sole as to hardness or softness have anything to do with the automatic stopping of the portion of the machine which operates on the sole?" Your answer to this question, in view of the two following answers, is not quite clear to me. Will you please explain this matter more fully than you have heretofore done?

*Ans.* The automatic leveling machine is organized to level the sole of any shoe which it is capable of leveling without manual interference on the part of the operator after the shoe has been presented to the leveling mechanism. It is provided with suitable adjustments for adapting it to operate properly upon a shoe of any size which may be presented to it, and it is also provided with an adjustment for varying the amount of pressure which is applied to the soles through the leveling roll, so that a shoe having a hard, thick sole can be leveled under greater pressure than a shoe having a soft or thin sole. The adjustment of the machine for adapting it to shoes of different sizes is made before the jack carrying the

shoe and presenting it for the operation of the leveling roll is brought by the operator into connection with the mechanism which operates the jack. The adjustment for varying the amount of pressure exerted upon the sole is also usually a preliminary adjustment, as it is not customary for the operator to change that adjustment while the machine is in operation. The operation of the machine on each shoe, however, assuming the machine to be running at a uniform speed, takes place in the same length of time whether the sole of the shoe be hard or soft.

*Int.* 408. In your present deposition you have referred, both in your direct and cross-examination, to many patents of the United Shoe Machinery Company under which it has made and put out machines. If any of those patents are not directly the property of the United Shoe Machinery Company, name the same.

*Ans.* In my discussion of blacking machine, model A, crest heel, one of the patents to which I referred as setting forth in its claims the organization of that machine was No. 805,763, November 28, 1905, Tuttle. That patent is owned by the United-Xpedite Finishing Company, a majority of the capital stock of which is owned by the United Shoe Machinery Company. The United Company, further, has a license under that patent.

One of the patents which defines in its claims mechanisms embodied in the flexible insole machine, Gem, is No. 609,110, August 16, 1898, Milner. The United Shoe Machinery Company does not own this patent, but has a license under it.

In discussing the patents which set forth mechanisms embodied in lacing machine, Ensign, I mentioned patent No. 855,969, June 4, 1907, Paine and Winkley. The United Company now has a license under that patent, which will eventually be assigned to the United Company.

Two of the patents which I mentioned as setting forth mechanisms embodied in lasting machine No. 5, U S M C, were No. 1,017,124, February 13, 1912, Winkley and Alley, and No. 1,018,-025, February 20, 1912, Winkley and Alley. The United Shoe Machinery Company now owns a half interest in each of these

patents. The other half interest will be assigned to the company in due course.

Two of the patents mentioned by me in connection with leveling machine, Atlas, are No. 818,503, April 24, 1906, Winkley, and No. 818,504, April 24, 1906, Winkley. The United Company is entitled to an assignment of both of these patents under the agreement between Winkley and Phillips and the United Shoe Machinery Company which constitutes Plaintiff's Exhibit No. 77, and is reproduced as an exhibit on page 615 of the record. Formal assignment of these two patents has not as yet been made, but will be effected in due course.

In my discussion of the experimental slugging machine, No. 5, I mentioned patent No. 809,160, January 2, 1906, Wingo. After that machine had been constructed it was found that a mechanical movement embodied in it *prima facie* infringed that Wingo patent, which was owned by the Brown & Sharpe Manufacturing Company, of Providence, Rhode Island. Accordingly, the United Shoe Machinery Company obtained a license under that patent.

Otherwise than as I have above indicated, all of the patents which have been referred to by me in this deposition as containing claims defining mechanisms embodied in machines made and put out by the United Company are directly owned by that company.

Mr. WEBSTER. All testimony with reference to ownership or title to patents is objected to as secondary, and therefore incompetent, immaterial and inadmissible as showing title in, or rights under, patents, it not having been shown that the instruments conveying title cannot be produced. All reference to the ownership or title of, or rights under, any patents issued after the date of the filing of the petition herein is objected to as incompetent, immaterial and inadmissible as having no bearing on the questions involved in this cause.

Mr. PHILLIPS. So far as at present advised, my redirect examination of this witness is closed.

*Cross Examination resumed by Mr. WEBSTER.*

*Cross-Int.* 409. You have testified as to the number of rapid out-sole lockstitch machines put out by the United Shoe Repairing Machine Company. Will you kindly state when that company first began to put out rapid out-sole lockstitch machines with cobblers?

*Ans.* I have not data at hand which will enable me to answer the question accurately, but I think it was in 1908 or 1909.

*Cross-Int.* 410. And, as I understand you, the United Shoe Machinery Company never put out the rapid out-sole lockstitch machine among cobblers?

*Ans.* I did not wish to be so understood, and should explain that prior to the formation of the United Shoe Repairing Machine Company the United Shoe Machinery Company had supplied out-sole stitchers to cobblers, and during the fiscal year ending March 1, 1909, such machines as the United Shoe Machinery Company had previously supplied to cobblers were transferred to the United Shoe Repairing Machine Company.

*Cross-Int.* 411. So that the number given by you, 961 out-sole stitchers, includes those put out by the United Company and those put out by the United Shoe Repairing Machine Company; am I right?

*Ans.* Yes, sir.

*Cross-Int.* 412. Will you kindly state when the United Shoe Machinery Company first put out out-sole stitchers among cobblers?

*Ans.* I have not data at hand which will enable me to answer that question.

*Cross-Int.* 413. Will you answer it approximately, or as near as you can at the present time, and at the next session give the exact date?

*Ans.* I shall be glad to ascertain the exact date, and if agreeable would prefer to defer answering the question until I can answer it accurately.

*Cross-Int.* 414. Do the out-sole stitchers which have been put out by the United Company and by the repair company among cobblers, or in repair shops, differ in construction from the out-sole

stitcher put out by the United Company among shoe manufacturers?

Mr. PHILLIPS. Question objected to as ambiguous and uncertain.

*Cross-Int.* 415. State whether during the period the out-sole stitchers were being put out among cobblers the machines differed in construction from the machines then being put out with shoe manufacturers?

Mr. PHILLIPS. Same objection.

*Ans.* Up to the date of the adoption of lockstitch machine, Goodyear out-sole rapid, model K, which became the standard commercial machine of the United Shoe Machinery Company on May 21, 1910, and which was succeeded in January, 1912, by lockstitch machine, Goodyear out-sole rapid, model M, the same machine was supplied to shoe manufacturers and to cobblers, that is, the Goodyear out-sole lockstitch machine of 1899 as subsequently improved. Since the date of the adoption of the model K lockstitch machine the same machine has been supplied to cobblers as before that date, that is, the machine officially known as lockstitch machine, Goodyear out-sole rapid.

*Cross-Int.* 416. In other words, as I understand your question, out-sole stitchers were adapted for both manufacturers' use and cobblers' use; am I right?

*Ans.* Yes, sir.

*Cross-Int.* 417. Are you willing to state whether the out-sole stitchers that are put out in repair or cobbler shops are put out under a lease or are sold outright?

Mr. PHILLIPS. Objected to as relating to nothing referred to either in the direct or redirect examination of this witness, and the witness is instructed that he is not called upon to answer the question unless ordered to do so by the court.

*Ans.* In view of advice of counsel, I decline to answer the question.

*Cross-Int.* 418. In your redirect testimony you referred to the case of *United Shoe Machinery Company v. Greenman*, reported in 146 Fed. Rep., page 759, this being a cause in which the interpretation of the claim of patent to French sewing machine, dated

January 2, 1896, patent No. 561,386, was involved ; and I now ask you whether in reaching your conclusion as to the meaning of the claim of that patent you took into consideration the matter quoted by the court, the same being, as I understand it, an extract from the file-wrapper and contents of said patent, which matter, following the remark by the court "Upon appeal to the examiners in chief, it was urged by the complainant ", reads as follows :—

"The prime requisite definitely made vital in the above issue is: There must be a heated block or plate and a looper-carrier, and the looper-carrier must move into, and out of, direct contact (*i. e.* touching engagement) with the block or plate, and the looper-carrier must be properly and continuously heated by this intermittent contact with said heated block or plate. . . ."

"The examiner does not base his rejection on any anticipatory device, but rejects it on the general state of the art, the said art being shown in nine patents, five of which are discussed in the examiner's statement. . . ."

"A review of these nine patents of record shows that there is no suggestion of heating any part by 'intermittent contact' thereof with a heated block. . . ."

"Again, each reference either has the heating means in constant contact with the part to be heated (as in Aldrich (2), Ashe, Garton), or it never at any time has the heating means in contact with the part to be heated (as in Wardwell (W14), 262,160, and Brown (D) 498,505). . . ."

"What is claimed is 'intermittent contact', and this only, and this is precisely what is shown and what is novel."

**Mr. PHILLIPS.** Question objected to as a mere repetition of cross-interrogatory, not relating to any new matter touched upon by the witness in his redirect examination.

*Ans.* Yes, sir.

*Cross-Int.* 419. Then do you mean that the word "contact" in the claim of the patent referred to has no meaning?

**Mr. PHILLIPS.** Same objection.

*Ans.* No, sir, I don't mean that.

*Cross-Int.* 420. Does it not mean "touching engagement"?

**Mr. PHILLIPS.** The same objection, and further objected to because the meaning of the word, in view of the decision referred to, is obviously purely a question of law.

*Ans.* I prefer to adopt the conclusion of the court that in view of the Patent Office proceedings it means "an intermittent contact as distinguished from a constant contact".

*Cross-Int.* 421. Well, if the heater plate and looper carrier are not brought in actual physical contact intermittently, is the mechanism such as is referred to in the claim under discussion?

**Mr. PHILLIPS.** Question objected to as vague and indefinite, it not appearing what mechanism counsel for the Government has in mind, and the witness not being called upon to speculate as to hypothetical structures.

*Ans.* I adhere to the opinion which I have expressed in my previous testimony, that the claim of patent No. 561,386 would accurately describe an organization in which the looper carrier was intermittently moved to a position sufficiently near the heated block or plate so that the looper carrier was heated by that block or plate. Undoubtedly the claim under discussion calls for an organization providing for intermitting movement of the looper carrier toward, and away from, the heated block or plate.

*Cross-Int.* 422. Is it not a fact that a very much more efficient result is attained in the mechanism under discussion when the heater block or plate comes in actual physical contact intermittently with the looper carrier than when the parts are only to a position where the plate and carrier are near enough to heat the looper carrier and without being in actual contact?

**Mr. PHILLIPS.** Same objection.

*Ans.* The measure of the efficiency of the combination called for by the claims of the French patent is the imparting of a sufficient heat to the looper to prevent chilling the wax on the thread as the thread passes through the looper. If that result is secured, the maximum of efficiency is attained and nothing can be gained by imparting more heat.

*Cross-Int.* 423. Your answer does not seem quite clear to me, and I will put it in this way: whether actual physical contact intermittently between the heated block or plate and the looper carrier is necessary for attaining the desired result?

Mr. PHILLIPS. Question objected to as based upon a hypothetical structure which the witness has had no opportunity to examine.

*Ans.* I think not in all cases. For example, on a cold winter day, when a factory was well heated and the steam under considerable pressure, an operator might very likely find that he would secure better results if the loop carrier did not quite touch the heated plate and he might accordingly find it advisable to bend the heated plate slightly so that the looper carrier would not quite touch it.

*Cross-Int.* 424. In your redirect examination you have made reference to "modern machines". Will you kindly state just what you mean by the term "modern machines"?

*Ans.* I mean, as they have been constantly and continuously improved during recent years, that improvement in respect to some machines dating back prior to the formation of the United Shoe Machinery Company. The term "modern machines" must, in view of the rapid development of the industry, be a relative term. Strictly, it means something different today from what it meant a year ago today, and as used a year ago today it would mean something different from what it would have meant if used as of conditions two years ago today.

*Cross-Int.* 425. Then in your testimony you did not use the term "modern machines" with any well defined meaning, did you?

*Ans.* Yes, sir.

*Cross-Int.* 426. I observe in your redirect testimony you say that at present shoes are less expensive than heretofore. Will you kindly point out what particular class of shoes are less expensive than they were a year or two years ago?

*Ans.* I believe that at no time in my testimony have I compared prices of shoes today with prices of shoes a year or two ago.

*Cross-Int.* 427. And is that the best answer you can make to the question?

*Ans.* I can add that I stated that shoes made by modern machines are much less expensive than shoes would be if made by hand processes.

[Adjourned to 10 A. M., Friday, November 7, 1913.]

BOSTON, MASS., November 7, 1913.

*Cross-Int.* 428. If you now have the data with reference to out-sole stitchers put out by the United Shoe Machinery Company among cobblers, as to the number put out by that company and the date when they were first put out, will you kindly spread it on the record?

*Ans.* The first Goodyear out-sole rapid lockstitch machine supplied by the United Shoe Machinery Company to a cobbler was shipped on February 18, 1899. Up to the time that the business with cobblers was taken over by the United Shoe Repairing Machine Company, in 1908, the United Company had supplied 292 of these machines to cobblers.

*Cross-Int.* 429. You say in your direct examination that the "extensive introduction of American shoes into foreign markets, particularly in the English market, is largely due to their neater appearance". Please state your authority for that statement.

*Ans.* It is common knowledge in the industry.

*Cross-Int.* 430. Where did you get your information?

*Ans.* I suppose I have been absorbing this information for years from actual contact with manufacturers and machinery men, from trade papers and from consular reports.

*Cross-Int.* 431. And do you say that shoes, especially welt shoes, as made now in England are not as neat in appearance as similar kinds of shoes made in the United States?

*Ans.* In view of the acknowledged superiority of American made shoes in respect to their style and appearance, English manufacturers have been striving for years to improve the style and appearance of their shoes, and at the present day there is by no means as great difference between the appearance of an American made shoe and an English made shoe as there was several years ago.

*Cross-Int.* 432. Is it not a fact that the English manufacturers have, for a considerable number of years, had the same kinds of machines furnished them by the United Company, or some company manufacturing the same machines, that the manufacturers of shoes have had in the United States?

*Ans.* English manufacturers have used some, but not all, of the machines which manufacturers in the United States use in the manufacture of shoes.

*Cross-Int.* 433. Could not English manufacturers have the various machines referred to by you for heel burnishing, blacking, edge setting, wheeling, etc., if they desired to use them?

*Ans.* Yes, sir; they could have had them if they had desired to use them.

*Cross-Int.* 434. I am endeavoring to fully appreciate the awful condition of things and the danger of shoes coming apart and water and gravel becoming lodged in the edges of the soles and the heels if the machine referred to for treating the edges of heels and the edges of soles were not employed, and I would like you to state whether it is not a fact that all of the various operations referred to by you, relating to the treatment of the edges of soles and the surfaces of heels, in your redirect examination cannot be performed by machines other than the machines furnished by the United Company.

Mr. PHILLIPS. Question objected to as referring to nothing touched upon in the direct examination of this witness, and as being argumentative and utterly immaterial to any issue before this examiner.

Mr. WEBSTER. Counsel for the petitioner respectfully calls attention to the phraseology of the witness found on page 2976 of the typewritten record [printed page 2772], as follows:—

"This would allow water and fine gravel to enter between the welt and sole, which would penetrate to the outseam and eventually to the inseam, and would result in damage to one or both of these seams, so that one or both would be likely to give way and the shoe come apart."

Counsel also calls attention to the frequent reference by the witness to the collection of water, sand and gravel which would quickly rot and decompose the outseam, to avoid which danger the witness certainly seems to say that the employment of wheeling machines, burnishing machines and polishing machines seems to be necessary.

Mr. PHILLIPS. Does the witness anywhere in redirect examina-

tion say that the operations of burnishing and edge setting cannot be performed by hand, or that they require any machines for their proper performance?

Mr. WEBSTER. Counsel states that he believes it does appear in the record that the witness states that all these things could be performed by hand, but the question now propounded is whether the same operations could be performed by machinery other than the machinery of the United Company.

Mr. PHILLIPS. With that understanding, the question is objected to as being improper cross-examination.

*Ans.* Machines for burnishing heels, machines for burnishing the edges of soles known as "edge setting" machines, and machines for wheeling and burnishing the upper face of the welt are offered to shoe manufacturers by other machinery concerns, in addition to those which are offered by the United Shoe Machinery Company.

*Cross-Int.* 435. *De bene*, and without waiving objections heretofore made, in your redirect examination you state that opposition was encountered by operators and manufacturers to the introduction of new machines, and that they disliked to make changes in machines they were using. Kindly state what means were employed to bring about the changes desired by the United Company and objected to by operatives and manufacturers.

Mr. PHILLIPS. Question objected to as containing assumptions unwarranted by the record and as being improper cross-examination.

*Ans.* I have made no reference to "changes desired by the United Company", although, perhaps, I should add to this statement that it is the fixed policy of the company to offer to manufacturers the best machines which can be produced for use in the manufacture of shoes. As a matter of fact, and as I have pointed out repeatedly in my previous testimony in regard to new machines, the facilities of the United Company's manufacturing plant have always been taxed to the limit in building new machines as they have been introduced from time to time, and in the case of every machine the company has always been seriously embarrassed in

supplying the urgent orders of manufacturers, and in each such case has been a long way behind its orders for years after the machines were first introduced. It is undoubtedly fortunate, from the standpoint of the United Company, that all manufacturers do not wish to change their machines immediately upon the introduction of a new and improved machine, as the company's manufacturing facilities would not be adequate to change all machines immediately.

Mr. WEBSTER. Answer is objected to as evasive and non-responsive.

*Cross-Int. 436.* I observe that you state in your last answer that "it is the fixed policy of the company to offer to manufacturers the best machines which can be produced for use in the manufacture of shoes". Do you mean by that portion of your answer that the United Shoe Machinery Company is the only concern in existence that can furnish "best machines" for the manufacture of shoes?

Mr. PHILLIPS. Question objected to as having no bearing on any matter introduced in the redirect testimony of this witness, or in his direct testimony, and as having no bearing on any issue triable before this examiner, which issue relates purely to patents owned and controlled by the United Company.

Mr. WEBSTER. Counsel for the petitioner respectfully calls the attention of the court to the statement voluntarily inserted in the record by the witness and quoted in the foregoing interrogatory.

Mr. PHILLIPS. Counsel instructs the witness that he is under no obligation to answer any question with regard to what other companies can do, unless so instructed by the court.

*Ans.* Under advice of counsel, I decline to answer the question, but I should like to state that the statement made by me in my preceding answer, and quoted in this question, was made in the course of my explanation that my testimony had been improperly quoted in the preceding question.

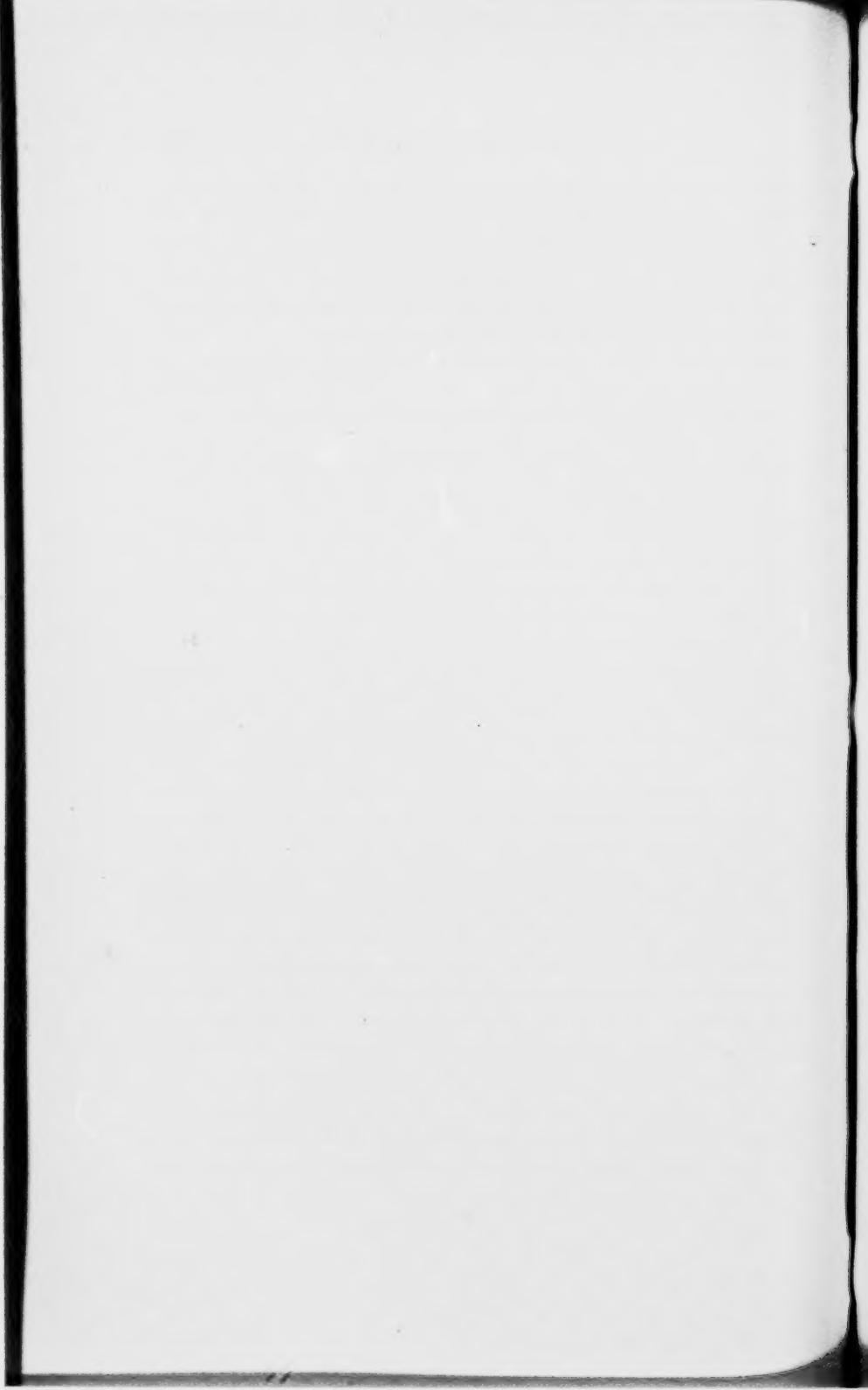
Mr. WEBSTER. In view of the attitude of the witness in declining to answer various cross-interrogatories propounded to him in the taking of his deposition, counsel for petitioner states that he

does not care to proceed further with the cross-examination until the question as to whether the witness shall be required by the court to answer the various questions he has declined to answer has been decided, and states that he is now waiting for instructions from his superior to determine what method of procedure to take to bring the matter to the attention of the court.

NELSON W. HOWARD.

Attest: CHARLES K. DARLING, *Special Examiner.*

[*Adjourned to 10 o'clock A.M., Wednesday, November 12, 1913.*]



## EVIDENCE FOR THE UNITED STATES IN REPLY.

TAKEN PURSUANT TO ORDER OF COURT, ENTERED JUNE 27, 1913,  
BEFORE ME,

CHARLES K. DARLING,  
*Special Examiner.*

BOSTON, MASS., November 12, 1913.

Present : ALLEN WEBSTER, Esq., *Special Assistant to the Attorney General, of Counsel for Complainant;*  
BENJAMIN PHILLIPS, Esq., *of Counsel for Defendant.*

## DEPOSITION OF CHARLES McCORMICK CHAPMAN.

*Direct Examination by ALLEN WEBSTER, Esq., of Counsel for Complainant.*

*Int.* 1. Are you the same Charles McCormick Chapman who has heretofore testified in this case?

*Ans.* I am.

*Int.* 2. The defendant the United Company has offered evidence in the effort or tending to show that a large number of machines were, in the commercial manufacture of shoes, essential (prior to the date of the filing of the bill herein) in the bottoming of shoes by machinery in accordance with the so-called Goodyear process. Have you studied the art of bottoming shoes by machinery sufficiently to enable you to testify what machines were, prior to said date, essential or necessary for the bottoming of welt shoes in the commercial manufacture of shoes by machinery under the Good-year process. And, if you answer yes, state what machines were so necessary or essential.

Mr. PHILLIPS. Questions objected to as improper rebuttal, and because the witness has not qualified to express an opinion in this matter.

*Ans.* I have studied the art relating to the bottoming of shoes according to the so-called Goodyear process, and as a result of my

study and research am able to state that there are but two absolutely essential or indispensable machines necessary to the production of a Goodyear welt and turn shoe made in accordance with the so-called Goodyear process. Those machines are the machine which is familiarly known as welt and turn machine and out-sole rapid stitcher.

*Int. 3.* Now, referring to the machine designated as welt and turn machine, Mr. Howard has testified, among other things, that the welt and turn machine constructed like the welt and turn machine No. 228 at the Whitman factory, and which type of machine has been designated in the record by common consent as welt and turn machine of 1899, was constructed and operated as set forth in the following patents: —

Patent No. 412,704, October 8, 1889, French and Meyer.

Patent No. 488,505, December 20, 1892, LaChapelle.

Patent No. 518,911, April 24, 1894, Briggs.

Patent No. 561,386, June 2, 1896, French.

Patent No. 495,452, April 11, 1893, Cole.

Patent No. 317,759, May 12, 1885, French.

Patent No. 732,729, July 7, 1903, French and Meyer.

Patent No. 461,793, October 20, 1891, Briggs.

Have you examined the above noted patents; do you understand the same; have you compared the same with the welt and turn machine referred to, and can you state which of said patents might properly be termed basic?

Mr. PHILLIPS. Question objected to as improper rebuttal, because it relates to no matter touched upon by the defendants in any testimony submitted by them in their defence. And it is further objected to as calling for a special opinion on the part of this witness on a matter which is purely a matter to be determined by the court.

Ans. I have examined the said patents, some of them being patents to which I referred in my previous testimony, and I have made a comparison of said patents with the said machine. There are but two of the several patents mentioned which I would term basic, viz., the patent to French and Meyer No. 412,704, October

8, 1889, which is referred to and covers a shoe-sewing machine; and the patent to Briggs, method of forming chain stitches, No. 461,793, October 20, 1891, the said method being exemplified in the operation of the said French and Meyer patent 412,704.

Mr. PHILLIPS. Answer objected to as incompetent and immaterial.

*Int. 4.* State your reasons for reaching your conclusion that the two patents mentioned by you in your answer are the only ones of the group that may properly be termed basic; that is, explain why the others may not also be termed basic.

Mr. PHILLIPS. Question objected to as improper rebuttal, as entirely without the terms of the order under which issues were submitted to this examiner, as leading, inadmissible, incompetent and immaterial, because the word "basic" has no recognized or accepted meaning with reference to the subject-matter.

*Ans.* The two patents referred to by me, viz., French and Meyer No. 412,704 and Briggs No. 461,793, are basic because the first one refers to the fundamental organization of a welt and turn machine, and the second, because the so-called method thereof exemplifies the fundamental mode of operation of the machine covered by the first patent. The remaining patents referred to by Mr. Howard, instead of being basic or running to the fundamental organization of such machine, relate to and cover by claim mere details of construction, the majority of which may or may not be used in the basic machine, and consequently do not affect the operation of the fundamental structure of said basic machine.

Referring particularly to the patent to French No. 317,759, there is a construction shown and described which relates to needle guide and actuating mechanism, welt guide and actuating mechanism, and a so-called sticker bar and actuating mechanism. With reference to the latter structure, although I have examined a number of welt and turn machines I have never seen the same embodied therein.

Referring to the LaChapelle patent No. 488,505, it will be seen that the same relates to a tension and brake mechanism whereby when the machine is brought to a certain position, determined by a

feature of the driving shaft, the tension may be altered or released. This is a detail which may or may not be used and has no reference to the fundamental organization of the welt and turn machine.

The patent to Cole No. 495,452 refers to a combination of elements including a wax pot, stripper for the thread, and a tension so associated as to produce certain results; also a means whereby the tension may be released and applied according to certain predetermined requirements. These mechanisms may or may not be used in the fundamental machine, and, while under some conditions may be desirable, do not run to the fundamental organization.

The patent to Briggs No. 518,911 has reference to a take-up mechanism including main and auxiliary devices for operating upon the thread during certain periods of the stitch formation. While primarily this take-up mechanism may be effective and in some sense desirable in the machine, its effectiveness is more or less overcome by after conditions of the machine in which it is used, owing to the fact that operation of the auxiliary take-up is impeded, due to clogging of the parts by the wax used on the thread of the machine. In fact, I have seen one or more machines in which this auxiliary take-up was practically out of commission, due to the condition just described by me.

The patent to French No. 561,386 has reference to a heating plate arranged in juxtaposition to the looper or looper carrier and particularly covers a construction wherein the looper carrier is caused to intermittently contact with the plate or heater block. This particular construction is a non-essential in the machine covered by the basic patent, owing to the fact that intermittent contact between the heating plate and the looper carrier is unnecessary. Furthermore, I have seen machines originally equipped with this heating plate and arranged in juxtaposition to the looper carrier devoid of such plate either because it had been physically removed by the operator, or partially devoid of the plate by reason of the fact that the operator had smashed a portion of it off with a hammer or other implement. The reason for this is that in the machine to which it was applied the heating plate or block was found to be in the way and to be an impediment to the operative in get-

ting at certain parts for the purpose of setting or resetting the same. Furthermore, it has been found that the heating system otherwise applied to the machine, and more or less encompassing the same and applied to the vital parts thereof, is amply sufficient for all the purposes in the machine during its operation.

The patent to French and Meyer No. 732,729 has reference to a thread-waxing device which may or may not be used on the machine, or any machine, and the claims of this patent run to details of construction which clearly are not necessary to the fundamental organization or basic structure of the machine covered by French and Meyer patent No. 412,704.

**Mr. PHILLIPS.** The answer is further objected to as being argumentative, because of lack of qualification of the witness to express any opinion in the matter in regard to which he assumes to testify.

*Int. 5.* Are the mechanisms referred to in the claims of the several patents to which you have made reference necessary to the successful commercial operation of the machine described in the patent termed by you basic, namely, No. 412,704?

**Mr. PHILLIPS.** Question objected to, first, because it is improper rebuttal; second, it is utterly without the terms of the order; third, it is leading, inadmissible, incompetent, immaterial, because the word "basic" has no recognized or accepted meaning with reference to the subject-matter; and, further, because if of any possible materiality it relates to matter to be decided by the court and not testified to by the witness, and because the witness is entirely unqualified to express any opinion as to the matters referred to in the interrogatory.

*Ans.* They are not.

*Int. 6.* Referring now to rapid out-sole stitchers, it appears from the testimony offered by the defendant the United Company that the machine designated in the record by common consent as the rapid out-sole stitcher of 1899 was constructed in accordance with patents No. 473,870, April 26, 1892, French and Meyer, and No. 474,774, May 10, 1892, French and Meyer, and in connection with such testimony various patents were introduced and testimony in reference to the same submitted. Will you kindly examine said

two patents referred to in the question in connection with the other patents introduced by the defendants (excluding, however, all reference to any patent issued after December 12, 1911), and state whether the two patents referred to in the question might properly be considered basic as compared with said machine, and as compared with the other patents introduced (exclusive of those issued after the filing of the bill herein), and give your reasons for such statement as you may make?

**Mr. PHILLIPS.** Question objected to, first, because it is improper rebuttal; second, it is utterly without the terms of the order; third, it is leading, inadmissible, incompetent, immaterial, because the word "basic" has no recognized or accepted meaning with reference to the subject-matter; and, further, because if of any possible materiality it relates to matter to be decided by the court and not testified to by the witness, and because the witness is entirely unqualified to express any opinion as to the matters referred to in the interrogatory.

*Ans.* The patents No. 473,870, French and Meyer, and 474,774, French and Meyer, are patents to which I have referred in my previous testimony and are respectively Plaintiff's Exhibits No. 212 and No. 210. The first patent, No. 473,870, comparatively speaking, is basic to the present day rapid stitcher. The patent No. 474,774 runs to a detail of construction or mechanism illustrated in the other patent, but not claimed therein in its details. The latter patent structure may be said to be a part of the former patent structure.

Since the testimony of Mr. Howard closed it has been a physical and mental impossibility for me or for counsel to go into the various patents with a view to determining their bearing on the questions at issue, but I will answer the remaining portion of the question to the best of my ability and will refer in order to the other patents which I understand were referred to by Mr. Howard. I may say, however, that I am more or less familiar with a number of these patents and the structures comprehended therein, and many of them have a very familiar appearance, since while I was in the

Patent Office I frequently had cause to examine the same and determine their structure and scope.

Referring, first, to the patent to Hadaway, reissue No. 11,578, reissued December 8, 1896 (original patent No. 549,124, November 5, 1895), which covers a welt-beveling attachment for sole-sewing machines, the combination of elements going to make up the organization of the patent structure, while probably convenient, is not essential to the fundamental organization of the rapid stitcher of patent No. 473,870.

The patent to Smith No. 553,139, January 14, 1896, has reference to details of improvement of a lockstitch machine, and while some of the claimed features might be useful in the rapid stitcher of the patent No. 473,870, provided they could be applied thereto, they are not by any means essential to said rapid stitcher.

The patent to French and Meyer, July 7, 1896, No. 563,471, has reference to a guiding mechanism which is not essential to the rapid stitcher of the patent No. 473,870, and has reference really to a means by which a certain form or shape of sole may be used as a controller in the proper location of the stitches in securing the sole to the welt. This is known in the art as the Baltimore or Scotch edge and the mechanism is more in the nature of a special attachment to machines of the rapid stitcher type.

The same is true of the French and Meyer patent, July 7, 1896, No. 563,472, and also of the patent to Shriner et al., May 11, 1896, No. 582,510.

It might be convenient at this point to refer to Defendants' Exhibit No. 109 as illustrating the Scotch edge or Baltimore type of shoe in contradistinction to such a shoe as is illustrated in Plaintiff's Exhibit No. 261.

The patent to Rush, January 16, 1900, No. 641,330, has reference to needle-lubricating device for sewing machines and is applicable to practically any sewing machine of the curved needle type and is not essential to the rapid stitcher of the patent No. 473,870.

The patent to Meloon, June 4, 1901, No. 675,783, granted on an application filed October 19, 1893, forfeited and then renewed November 22, 1899, has reference to a guiding mechanism similar

to those just referred to by me in connection with the Scotch edge shoe, and belongs in the same category with said two patents mentioned.

The patent to Hadaway, July 8, 1902, No. 704,457, has reference to a welt-beveling mechanism for shoe-sewing machines and runs particularly to means for throwing the welt-beveling mechanism into and out of operation during the operation of the machine. Such a structure, device or mechanism is not essential to the rapid stitcher of patent 473,870, although it may be convenient from a commercial standpoint.

The patent to Hadaway, July 8, 1902, No. 704,458, also refers to a welt-beveling mechanism for shoe-sewing machines and is combined with an edge gage and falls in the category with the patent last mentioned.

The patent to Richardson, October 7, 1902, No. 710,612, has reference to a different type of machine from that illustrated in the patent 473,870, and while it is conceivable that some of the claimed structure might be applied to the machine of the said rapid stitcher, such mechanism is by no means essential to the rapid stitcher structure of the said patent 473,870.

The patent to Richardson, October 7, 1902, No. 710,613, has reference to the same type of machine illustrated in the last patent mentioned and is different in type and structure from the French et al. patent structure No. 473,870. My statements relative to the last mentioned Richardson patent apply in like manner to this patent now under discussion.

The French and Meyer patent, July 7, 1903, No. 732,729, for thread-waxing device for sewing machines, is the one which I have considered in connection with the previous question relating to the welt and turn machine and, as before stated in connection with that machine, the structure of this patent is not essential to either that machine or to the rapid stitcher of the patent No. 473,870, since it has reference to a wax pot and holding and heating means for the wax.

The patent to Haradon, October 13, 1908, No. 900,925, for welt-channeling attachment for sole-sewing machines, covers a detail of

construction relative to mounting the channeling knife in combination with the stitch-forming devices of said machine and is not essential to the rapid stitcher of the patent 473,870.

The patent to Bayard, December 8, 1908, No. 906,092, has reference to a so-called apron and may or may not be used according to desire in connection with the machine of patent No. 473,870. It is by no means essential to the structure of the latter machine.

The patent to Hadaway, May 25, 1909, No. 922,696, has reference to a detail of construction running to a needle-lubricating device. It may or may not be used in the machine of the rapid stitcher type and is not essential to the latter.

The patent to Alley, August 3, 1909, No. 930,115, covers a thread-waxing device and is applicable to various types of machines, may be convenient therein, but is not essential to such a machine as that covered by the patent 473,870.

The patent to Plant, November 16, 1909, No. 940,055, has reference to a particular form of work support and guard in combination therewith, and is not at all essential to the machine of patent No. 473,870.

The patent to Plant, November 23, 1909, No. 940,723, runs to a channeling device for sewing machines, and the details of construction of said device are by no means essential to the rapid stitcher of patent 473,870.

The patent to Plant, November 23, 1909, No. 940,725, has reference to details of construction in a machine for stitching soles, while convenient and possibly desirable, are not essential to the rapid stitcher of patent 473,870.

The patent to Arnold, January 18, 1910, No. 946,591, has reference to details of construction running to the channeling knife and its arrangement with reference to the stitch-forming mechanism and welt-guiding device, and is not essential to the rapid stitcher of patent 473,870.

The patent to Hadaway, July 12, 1910, No. 963,761, refers to a mechanism for channeling the welt to receive the stitches and has reference to nothing which is absolutely essential to the rapid stitcher of patent No. 473,870.

The patent to Thayer, November 1, 1910, No. 974,309, relates to a tension device of a shuttle of lockstitch machines. This structure can be used with only certain types of shuttles used in lockstitch machines and is not essential to the rapid stitcher of patent 473,870.

The patent to Dow, November 1, 1910, No. 974,757, has reference to the same type of device as the last preceding patent, and the same remarks apply to it.

*Int. 7.* Are the structures or mechanism of any of the claims of any of the patents referred to by you in your last answer necessary to the successful operation of the rapid out-sole lockstitch machine of patent No. 473,870 in the commercial operation of that machine in attaching welts and out-soles in the manufacture of shoes by machinery?

Mr. PHILLIPS. The question is objected to as improper on rebuttal, referring to no matter referred to by the defendants submitting testimony before this examiner. It is further objected to as being leading and incompetent, relating to no matter at issue before the examiner, and, further, because of the utter lack of qualification on the part of the witness to express any opinion on these matters.

*Ans.* I cannot answer that question with reference to all the claims of all the patents referred to, for the reason that I have been unable to go through the patents in detail sufficiently to give a comprehensive answer. In making my last answer, however, I read and had in mind the structures of certain of the claims of all the patents, and in connection with my prior familiarity with a number of the patents and the structures covered thereby I can state that there is no claimed structure, so far as I have been able to determine, or so far as I know anything of the patents, which is referred to which is absolutely essential or necessary to the structure of the rapid stitcher of the patent No. 473,870.

*Int. 8.* I neglected in interrogating you with reference to the patents relating to welt and turn machine of 1899 to call your attention to the testimony of Mr. Howard with reference to the Briggs patent, October 20, 1891, No. 461,793, and I will now ask you whether you agree or disagree with Mr. Howard in his statement

with reference to the Briggs patent in comparing the same with the patent to Stickel No. 296,284, dated April 1, 1884, and give your reasons for the same?

Mr. PHILLIPS. Objected to as immaterial to any matter before this examiner in the trial of this cause.

*Ans.* I have read over hastily, in the very short time allotted to me since the close of Mr. Howard's testimony, that portion of his testimony relating to the Briggs method, the Stickel anticipation as alleged by me, and my construction of the said Stickel patents.

I do not agree with Mr. Howard in his exposition of the Stickel patent and the method of operation disclosed therein with reference to the hand implement thereof, and my disagreement is based upon two general propositions,—the first being that Mr. Howard has clearly misinterpreted the Stickel patent and the mode of operation of the implement covered thereby, and the second being that I have made a practical demonstration of the mode of operation of the Stickel instrument in making chain-stitches. In fact, I have used the implement made strictly in accordance with the Stickel patent, have made chain-stitches on a piece of work identical with that of the Briggs patent, and have verified in every particular all statements made by me in my previous testimony.

In order to clearly demonstrate the mode of operation described by the patent to Stickel and make a comparison thereof with the Briggs method as described in the patent No. 461,973, I have prepared a sheet of drawings which I here produce illustrating the precise character of work shown in Figs. 8, 9 and 10 of the said Briggs patent, excepting only the welt, which in that patent is indicated by the reference character *d*.

[*For convenience the sheet of drawing produced by the witness is put in evidence at this point, and marked "Plaintiff's Exhibit 263".*]

Mr. PHILLIPS. The introduction of this exhibit is objected to on behalf of the defendants, it being entirely immaterial to any issue triable before this examiner.

[*Ans. to Int. 8 continued:*]

In this sheet of drawings which I have produced I have illustrated five important positions of the Stickel implement during the

process of making a plurality of chain-stitches in accordance with the Briggs method. As before stated, I have omitted the welt because I found in manipulating the instrument with the shoe placed on a jack it was difficult for me to hold the welt while operating the implement and passing it through the several stitches illustrated by the five figures of the Exhibit No. 263.

It should be noted in passing that Figs. 1 to 7 of the Briggs method patent correspond in point of material substantially with the material or work shown in the Stickel patent, and that the figures of Plaintiff's Exhibit 263 have been made to correspond with Figs. 8, 9 and 10 of the Briggs patent and to show the last, the sole with its channel and lip upturned, the upper and a piece of lining which is usual in making shoes, the lining, however, being omitted from the Briggs drawings. In the figures of Exhibit No. 263 the "between substance" is indicated by words, while in the Briggs patent it is indicated by the reference character *e*.

Now, by comparing the figures of drawings of the Stickel patent with the figures of drawings of Plaintiff's Exhibit 263, and the three Figs. 8, 9 and 10 of the Briggs patent, the following will be apparent: —

Assuming that a plurality of chain-stitches have been made as shown in Fig. 1 of the exhibit, in Fig. 9 of the Briggs patent and in Fig. 7 of the Stickel patent, and that a loop has been drawn through from the channel side of the sole and down through a preceding loop of the finished chain-stitches, we have the implement of the Stickel patent in the position shown in "No. 7" and the position of Fig. 9 in the Briggs patent. Now, by moving the needle laterally the loop on the hook thereof is moved laterally and a new position is located for the penetration of the needle to pass through the upper, and first a welt, if a welt be used as in the Briggs patent, and then through the between substance and into the channel of the sole. In doing so the needle passes from the position of "No. 7" of the Stickel patent to the position of "No. 4" and into the position of Fig. 2 of the Exhibit 263, and the position of Fig. 10 of the Briggs patent. At this point the preceding loop indicated by *s* in the exhibit and in the Stickel patent and by *h* in the Briggs

patent is drawn down tightly about the shank of the needle by tension applied to the thread in the direction of the arrow indicated by the numeral 10, Fig. 10, Briggs patent, by the arrow at *z* of the Exhibit 263, Fig. 2, and the extreme end of the thread at "No. 4" position of the Stickel patent, this end of the thread in the other figures, "No. 5", "No. 6" and "7", being indicated by *z*.

[*Answer suspended.*]

Mr. WEBSTER. Counsel for the United States states that, in view of the vast number of patents introduced by the defendants and the utter impossibility of examining the same and preparing to proceed in the limited time given, it is desirable that an adjournment be now taken until the 14th instant to enable counsel and the expert to examine the patents as far as possible during the interval.

[*Hearing adjourned to 10 o'clock A. M., Friday, November 14, 1913.*]

BOSTON, MASS., November 14, 1913.

[*Answer to Int. 8 continued.*]

In this position of the parts the preceding loop which has been drawn taut about the shank of the needle is also drawn snugly against the face of the work. It will also be clear that the precise direction of strain or tension upon the thread is not of the essence of the Briggs method, nor of the operation of the Stickel implement. However, such tension or direction of pull for the purpose of drawing the preceding loop or first loop against the surface of the work and around the shank of the needle may be such as will necessarily bring about the result required and, at the same time, or in direct sequence therewith, the thread may be wrapped about the holder *d* of the Stickel instrument and then about the needle thereof so as to place the thread in the hook of said needle and thereby form the second loop indicated by *S'* in Fig. 3 of Plaintiff's Exhibit (drawing) 263, and in "No. 5" position of the Stickel patent, the corresponding position in the Briggs patent being illustrated in Fig. 8 of the drawings thereof. The implement will now be retracted, referring to Plaintiff's Exhibit (drawing) No. 263, in the direction of the arrow 3, Fig. 4, the thread being held under tension at *Z* while the instrument is being withdrawn. A corre-

sponding position in the Stickel patent is shown in the "No. 6" position. There is, however, no corresponding position in the Briggs patent drawings.

During the retracting movement of the implement as just described the second loop S' is gradually drawn into the between substance through the lining and the upper and into the position of Fig. 5, Plaintiff's Exhibit (drawing) No. 263, preparatory to the lateral movement of the instrument to assume the position of that figure. This operation results in drawing in the second loop of thread S' of the Stickel patent into the position of No. 7 of that patent, a corresponding position being shown in the Briggs patent at Fig. 9. The thread, during this operation, is, of course, under more or less tension at the point Z, Plaintiff's Exhibit (drawing) No. 263 and Stickel patent, and the result is that the second loop S' is also drawn through the preceding loop S preparatory to shifting the instrument laterally to locate another needle-penetrating position, this latter position being shown in Fig. 5 as well as in Fig. 1 of Plaintiff's Exhibit (drawing) No. 263 and the "No. 7" position of the Stickel patent. In carrying out this method with the implement upon work precisely as illustrated in Plaintiff's Exhibit (drawing) No. 263, I used both unwaxed and waxed thread. Waxed thread being the usual condition in sewing shoes, I used that more frequently, and in each instance found that it was a physical impossibility for the thread at any stage in the manipulation of the instrument to reeve or slide in the hook of the needle. In using unwaxed thread more tension was required at the point Z during the manipulation of the instrument to prevent reeving, but reeving was prevented by the proper manipulation of the thread at all points in the manipulation of the instrument.

Now, with reference to Plaintiff's Exhibit (drawing) No. 263, and in order to nail the Stickel mode of operation fast to the Briggs method, I will read the latter upon said Exhibit No. 263, wherein according to the first step of the Briggs method the loop S, Fig. 1 of the exhibit, has been drawn through the material or a hole therein to the position shown in said figure. The next step is "inserting an instrument through the loop and holding the instru-

ment in a second hole in the materials at the point desired for the next stitch". This is illustrated in both Figs. 1 and 2 of the exhibit drawing wherein the instrument holds the loop S by its hook and in the Fig. 2 position the instrument is inserted and held in a second hole in the materials at the point desired for the next stitch. The next step of the method is "drawing on the supply end of the thread, thus drawing the loop that is now around the instrument against the materials". This step is illustrated by both Figs. 2 and 3 of the exhibit drawing, wherein, first, the tension is applied at the point Z to the thread, Fig. 2, to draw the loop S about the shank of the needle and snugly against the face of the work and, at the same time or by a continuous operation, the second loop S' is formed as shown in Fig. 3. The next step is "forming another loop from the supply thread on the opposite side of the materials", this step being, as before stated, illustrated in Fig. 3, wherein, by the succeeding or continuous operation of drawing in the preceding loop S, the succeeding loop S' is thrown about the holder d and into the hook of the needle. The next step of the method is "removing the instrument from the second hole in the materials and from the drawn down loop, and passing the second loop made from the supply thread through the second hole in the materials and through the drawn down loop". Each of these steps, as you choose, is illustrated in Figs. 4 and 5 of the exhibit drawing No. 263, wherein the second loop S' is being drawn into the materials and while the needle or instrument is being removed from the second hole in the materials, and the subsequent portion of this step is shown in Fig. 5, wherein the needle A is shown as having drawn the loop S' through the preceding loop S, by which act the needle has been drawn from the latter or removed from the latter.

It will thus be seen that every word, every step and every action of the Briggs method is exemplified in the drawings of Plaintiff's Exhibit 263, which is an exemplification of the mode of operation described in the patent to Stickel with reference to the implement illustrated therein.

I will here note that in reciting the Briggs method upon the

drawing of Plaintiff's Exhibit 263 I have, for convenience, made less subdivisions of the steps of the method than in a preceding exposition of the said method heretofore given in my testimony, this being because I found it simpler in reading the method upon the drawings of the Plaintiff's Exhibit 263 to follow the steps of the Briggs method in the manner stated by me. I will note in passing that the gist of the Briggs method lies in preventing as much as possible the reeving of the thread against the between substance in the formation of the chain-stitches and, in so doing, drawing the loop or loops of thread snugly against the face of the work and in the channel of the sole and tightly around the needle shank or stock.

*Int.* 9. In order to have your answer briefly stated, I have to say that it is my understanding that you testify that the method of the claim of the Briggs patent is shown and anticipated in the prior patent to Stickel. Kindly state if I am correct in my understanding.

Mr. PHILLIPS. Question objected to as improper rebuttal, as leading, as immaterial to any issue triable before this examiner, and as calling upon the witness for an expression of opinion on what, if of any materiality at all, would be purely a matter of law for the court.

*Ans.* You are correct.

*Int.* 10. Have you knowledge of any statements by way of advertisement or reports of the United Company or its officials which tend to support your statement that welters and stitchers are the only indispensable machines required for the commercial bottoming of shoes by machinery?

Mr. PHILLIPS. Question objected to as improper rebuttal and as immaterial to any issue triable before this examiner, and as calling for secondary evidence, and being incompetent and irrelevant.

*Ans.* I found in the record, at page 1141 of plaintiff's exhibits, Plaintiff's Exhibit 167, which is, I believe, a portion of the annual report of President S. W. Winslow to the stockholders of the United Shoe Machinery Corporation of June 17, 1911. In this exhibit there occurs the following: —

"In constructing a Goodyear welt shoe which is the highest type of shoe now generally worn, the indispensable machines which the company supplies exclusively are the Goodyear welt machine and the Goodyear stitching machine. These are the machines by which the sole and the upper are sewed together after the manner in which they would be sewed by hand."

By this I understand the welt and turn machine and the rapid stitcher to be referred to.

*Int.* 11. In the commercial manufacture of shoes by machinery, what machines are of secondary importance in the bottoming of shoes?

Mr. PHILLIPS. Question objected to as improper rebuttal and as having been fully gone into by counsel for petitioner in his opening case before the examiner, and as immaterial and incompetent and outside the scope of the order upon which proofs are being taken before this examiner.

*Ans.* The machines of secondary importance are a machine for insole channeling, a machine for lasting, a machine for sole laying, a machine for rough rounding and channeling, a machine for heel-seat nailing, and such machines as are ordinarily employed in the heeling operation generically considered, a machine for edge trimming.

*Int.* 12. I notice you omit from the list machines for leveling or beating soles. Are they properly included in the list of secondary machines?

Mr. PHILLIPS. The same objection.

*Ans.* They may be considered of secondary importance.

*Int.* 13. Mr. Howard has testified at some length in behalf of the defendants in reference to insole channeling machines and in reference to patents relating to insole channelers. If you have knowledge of any patents which tend to limit the scope of any of such patents put in evidence by the defendants, will you please specify the same and state the relation of such patents to the patents put in evidence by the defendants, and if patents commented upon by you as anticipatory show any prior structure adapted for channeling insoles, point out the same and in that connection state whether such patents may be considered basic or anticipatory with reference

to the patents introduced by the defendants, and give your reasons for same.

**Mr. PHILLIPS.** Question objected to as entirely without the scope of the order of the court under which this testimony before the examiner is being taken, and for the further reason that the word "basic" has no proper definition in the art, and, further, because if of any materiality it is a question of law for the court.

*Ans.* As heretofore stated, I have had very little opportunity to study or go into the prior state of the art having reference to or bearing upon those patents to which Mr. Howard has made reference, but in answer to the question I refer to the patent to Wellington No. 454,631, June 23, 1891, for channeling machine, which shows a structure involving the fundamental principles required for the purpose of insole channeling. This patent, in its claims, calls for details of construction, but those details are embodied in a fundamental organization or structure which, in a generic sense, is essential to all insole channeling machines. The various patents referred to by Mr. Howard also run to details of construction in their claims, and while the claims of such patents may not be specifically answered by this patent to Wellington, or the structure shown therein, nevertheless the Wellington structure is such as to lay the field of insole channeling wide open to the public and prevent any basic claim or generic claim in any of the said patents referred to by Mr. Howard, if such claims existed, from being valid. As before stated, the Wellington machine as illustrated in the patent marks substantially the foundation of the present day insole channelers. By this I do not mean to be understood that the insole channelers of the present day structure are not more effective or more convenient from the commercial standpoint than the Wellington machine, but simply that the latter machine may be taken as an exemplification of a pioneer structure upon which all present day structures are founded.

**Mr. PHILLIPS.** Answer objected to as involving merely guess-work on the part of the witness, and statements purely of matters which, if of any materiality, would be questions of law for the court.

[Counsel for petitioner offers the Wellington patent testified to by the witness in evidence, and asks that the same be marked "Plaintiff's Exhibit 264".]

Mr. PHILLIPS. Please note my objection to this exhibit as immaterial and as having no bearing on any issue triable before this examiner.

Int. 14. Mr. Howard has testified in behalf of the defendant the United Company with reference to lasting machines of the type known as Chase lasters. Will you kindly state whether you have knowledge of any of the art existing prior to the patents introduced in behalf of the defendants under the head of "Chase lasters" and testified to by Mr. Howard, and state how the same affects the scope, etc., of the said patents referred to by Mr. Howard, to the exclusion, however, of any patent issued after December 12, 1911, and in connection with such answer you may comment upon the patents introduced by the defendants dated as late as January 10, 1888, as found in Defendants' Exhibit 150.

Mr. PHILLIPS. Question objected to on the ground that the matter inquired about is beside any issue triable before this examiner, and for the further reason that if of any materiality the question of scope of any of the patents referred to is a question of law for the court and not properly addressed to an expert witness.

Ans. I have found it unnecessary to go outside of, or beyond, the art brought into the case by Mr. Howard as I understand it; that is to say, Mr. Howard has referred to a number of very early patents relating to lasting machines as shown in Defendants' Exhibit No. 150 preceding those patents granted to Chase on such machines, and from which the machine in question takes its name. The various patents referred to by Mr. Howard and granted to Purinton,—

No. 25,673, October 4, 1859;

No. 1,382, reissued January 6, 1863, Purinton;

No. 28,120, May 1, 1860, Wells;

No. 41,967, March 15, 1864, Wells;

No. 44,916, November 1, 1864, Fischer;

No. 90,651, June 1, 1869, Fischer;

all show lasting machines and devices and mechanisms to be used

in lasting machines which are clearly of pioneer character from the mechanical lasting standpoint. These patents clearly constitute a prior state of the art in view of which patents on such structures as are shown in the patents to Chase No. 340,860, April 27, 1886; No. 364,088, May 31, 1887, Chase, and the succeeding patents in the same exhibit, Defendants' Exhibit No. 150, are necessarily limited. Some of these patents referred to by Mr. Howard, and forming the Defendants' Exhibit 150, I have heretofore commented upon in my previous testimony, and it requires but a cursory glance at the claims of the said patents to determine the fact just stated by me with reference to the prior art.

I may note in passing that the patent to Chase No. 571,339, dated November 17, 1896, and entitled "Lasting Machine", contains a claim covering a structure which I have several times carefully examined both on the Chase lasting machines at the factory of the Shoe & Leather Company at Whitman, Massachusetts, and at the Long factory at South Framingham, Massachusetts. This structure has reference to the means by which the sidewise tiltable carriage may be locked from tilting,—said means being indicated at 21, Fig. 1, of the drawings of said patent No. 571,339, consisting of a couple of arms on the ends of a transverse shaft adapted to be raised and lowered for the purpose of engaging and disengaging the bottom of the tiltable carriage. I have been unable to discover that this structure has any real commercial value, and I have been unable to find a single operative who, if he knew the device were in the machine, ever used it for any purpose. In fact, every operative of whom I have inquired, and this runs to all the machines which I have examined, has, in the first instance, been unable to tell me the function of the device, and in each instance has looked with astonishment at the structure when I pointed it out to him. Each in turn said he had never used it, and each in turn would speculate upon its value. I may add that in not one of the machines examined by me did I find this device in actual use, and at no time during the process of lasting a shoe did any of the operatives either use it, or apparently find any use for it.

Mr. PHILLIPS. All that portion of the answer relating to alleged conversation of operatives is objected to as hearsay.

*Int.* 15. Mr. Howard has testified at considerable length with reference to sole-laying machines, sole-leveling machines, and sole-beating machines, and in connection with such testimony there was introduced, and he has commented upon, the various patents. Have you knowledge of any patents prior to those comprising Defendants' Exhibit 120 (excluding all reference to patents issued after December 12, 1911), showing devices adapted for accomplishing the results testified to by Mr. Howard as shown in said patents? And, if so, state what such prior patents are, and state the relation of the same to patents of said exhibit, exclusive, as before stated, of any patent issued after December 12, 1911.

Mr. PHILLIPS. Question objected to as outside the scope of the order of the court under which this testimony is being taken, and as immaterial and incompetent.

*Ans.* Within the short time allotted to me I have been unable to make an extensive examination of the arts of sole laying, leveling and beating, but I have found one patent which is long prior to any of those mentioned by Mr. Howard and included within Defendants' Exhibit 120, the same being the patent to Cutcheon No. 384,893, June 19, 1888, entitled "Beating Out Machine".

Preliminarily, I will state that I understand the terms "beating", or "beating out", or "leveling", to be synonymous. The term "laying", or "sole laying", however, does not mean the same thing as beating and leveling.

The patent to Cutcheon shows a structure, however, which may be used as a sole-laying machine, although primarily and fundamentally constructed for the purpose of beating or leveling the sole. This machine is duplex in character, or is what is known in the art as a "gang" machine, and includes the fundamental idea of means of holding the shoe for leveling or beating in position to receive the direct pressure of a die or mold. This patent also includes in its structure the fundamental idea of means of presenting the shoe alternatively to the operator and to the press or leveling device. This patent to Cutcheon No. 384,893 may be described

as a pioneer and as containing a basic claim, and in this connection I refer particularly to claim 1.

Most of the patents referred to by Mr. Howard I note are of the type which may be termed "roller pressure" machines, in contradistinction to the type illustrated by Cutcheon patent No. 384,-893, which is of the direct pressure type. Notwithstanding this fact, the fundamental principle involved in the two types of machines is the idea of means of smoothing or rendering uniform the surface of the sole of a shoe, and runs to the idea of reducing the hills of the sole to the dales thereof, which in practice are more or less prominent. It makes no difference in the fundamental operation whether the pressure for this purpose is applied by the rolling or sliding action of the devices employed in the patents referred to by Mr. Howard, or by the direct pressure at a right angle to the sole as in the Cutcheon patent. As before stated, I look upon the Cutcheon patent and the claims thereof as pioneer and basic and as a direct limitation upon all those patents referred to by Mr. Howard and embodied in the Defendants' Exhibit No. 120.

I may note in passing that at the Whitman factory I examined one of the sole-leveling machines and commented on the same in my previous testimony, and found that it involves the fundamental principle of such patents as are referred to by Mr. Howard in the Defendants' Exhibit 120, and particularly the patent to Winkley et al. No. 540,222, May 28, 1895, No. 540,223, May 28, 1895, Winkley et al., and others of similar type, of later date, included in the said Defendants' Exhibit 120.

The machine at Whitman is of the gang type, that, is, it is duplex in that it employs a pair of rollers and a pair of shoe supports operated so as to alternately present the shoe to the operator and to the roller by the leveling operation.

I note that a good deal has been said in some of the patents of Defendants' Exhibit 120 relative to the automatic operation of the roller pressure means which enables the machine to operate so as to come to a stop at certain times, so as to present the shoe for removal, and another one to be placed in convenient position for the operator. The machine at Whitman was so constructed as to

carry out this operation, but the mechanism for doing the work just described was blocked out of operation. By this I mean that, although the clutch and the mechanism for operating the same were in the machine, and capable of carrying out the operation intended, nevertheless the operator had blocked the clutch members into constant contact so that the machine actually continuously operated, thereby eliminating the automatic stopping and starting.

*Int.* 16. Mr. Howard has testified in behalf of the defendants at considerable length with reference to rough rounding and channeling machines, and in connection with such testimony there was introduced various patents with reference to which Mr. Howard testified. Kindly state whether you have knowledge of any prior art or whether you find in any of the patents forming a part of Defendants' Exhibit 116 any structures of patents containing basic claims or open to a construction of a pioneer or anticipating patent relating to the art as disclosed in said patent. Will you please note that the inquiry eliminates any comment by you with reference to any patent issued after December 12, 1911?

Mr. PHILLIPS. Question objected to as being outside of the order of the court, as being incompetent and immaterial because the word "basic" has no proper definition in the art, and because if the subject-matter of the interrogatory is of any materiality it is a question of law for the court and not a proper subject of interrogatory addressed to an expert witness.

*Ans.* I have examined all the patents referred to by Mr. Howard and included within the Defendants' Exhibit 116, and find among them a couple of patents to which I referred in my previous testimony, viz., the patent to Briggs, November 24, 1891, No. 463,982, and Briggs et al. No. 511,263, December 19, 1893. Primarily, I look upon these two patents as constituting a state of the art prior to all the other patents referred to by Mr. Howard in the said Defendants' Exhibit 116, in view of which the said other patents are necessarily limited and subordinated in the matter of their structure and their claims.

These two patents run to the fundamental organization of a rough rounding and channeling machine, and the arrangement of

knives or cutters for the purpose of channeling and trimming the sole. The later of the two patents, viz., No. 511,263, also discloses a guiding mechanism of duplex character for the purpose of gauging the operation of the knife or knives relatively to the edge of the sole or the upper of a shoe, and may be interesting from the standpoint of the so-called improvement in guides or gauges for producing the work of the Baltimore edging attachment, or Scotch edging attachment, or extension sole attachment applied to the rapid stitcher.

As anticipating all of these patents, however, because of its prior date and fundamental structure, I note the patent to Turner, dated September 21, 1880, No. 232,382, for a machine for channeling and trimming boot and shoe soles. This patent contains a structure fundamental in character for channeling the sole and trimming the edge thereof, and the claims of this patent are basic or generic in character. In view of this prior patent illustrating an early state of the art, all the patents referred to by Mr. Howard are necessarily subordinate and should or must necessarily, in their claims, run to details of construction and limited features of invention.

[*Patent to Turner, machine for channeling and trimming boot and shoe soles, September 21, 1880, No. 232,382, referred to by the witness, is offered in evidence, and counsel asks that the same be marked "Plaintiff's Exhibit 265".*]

Mr. PHILLIPS. Please note my objection to the exhibit as immaterial to any issue within the order of the court.

*Int. 17.* Mr. Howard has testified at considerable length with reference to welt beaters, and in connection with such testimony various patents have been introduced and commented upon. Kindly state whether you have knowledge of any patent in the art prior to those commented upon by Mr. Howard and introduced in evidence by the defendants, or whether you find among those introduced by the defendants and commented upon by Mr. Howard, same being shown in Defendants' Exhibit 170, any patent which shows the operative device in welt beaters which is in the nature of a pioneer patent or disclosure containing a claim or claims basic in character, and compare the same with the remaining patents in said exhibit.

Mr. PHILLIPS. Question objected to as outside the order of the court, and for the reason that the term "pioneer and basic" has no proper definition in the art, and if the matter inquired about is of any materiality it is a question of law for the court.

*Ans.* Among the patents referred to by Mr. Howard, and included within the Defendants' Exhibit 170, I find the patent to Littlefield No. 320,075, June 16, 1885, machine for beating out welts. This patent discloses in the drawings, and describes in the specification, a fundamental organization adapted for beating out welts, now commonly known as "welt beaters". The organization described and illustrated is covered by a very generic claim in the said patent, which is as follows:—

"1. In a machine for beating out welts attached to the uppers and soles of boots and shoes, the work support shaped to enter the space between the upper and its attached welt, combined with an automatically reciprocated hammer to hammer the said welt, substantially as described."

In view of this very broad claim, all other patents referred to by Mr. Howard and included within the said exhibit No. 170 are necessarily directed to subordinate specific structures and are necessarily classed as mere improvements in the art. This patent, with reference to all the other patents referred to by Mr. Howard, is necessarily a pioneer.

Mr. PHILLIPS. Answer objected to as involving expression of opinion on a question which, if of any materiality, would be purely a question of law.

*Int.* 18. Mr. Howard in testifying in behalf of the defendant the United Company has referred at considerable length to Amazeen skivers, and in connection with such testimony various patents were introduced by the defendants. Will you kindly examine the patents comprising Defendants' Exhibit 130, and state what you find with reference to the prior art as disclosed in those patents, as compared with those which had not expired December 12, 1911.

Mr. PHILLIPS. Objected to as improper rebuttal and outside of any issue triable before this examiner, and as incompetent and immaterial.

*Ans.* Among the patents referred to by Mr. Howard, and included within Defendants' Exhibit 130, I find the early patent to Amazeen, dated February 26, 1878, No. 200,682. This patent includes in its organization, as shown in the drawings and described in the specification, a structure fundamental in character and adapted for skiving or shaving leather or other materials. The claims of this patent run to the fundamental organization of a leather skiving machine and relate to the arrangement of the cutter, the bed and the feed. This patent embodies in its structure the general principles of the present day Amazeen skiver and other skivers, and the subsequent patents referred to by Mr. Howard in the said exhibit, beginning with the patents of 1898, are necessarily directed to improvements and the claims thereof are necessarily subordinately specific to the claims or claimed structure of the said early Amazeen patent first referred to by me.

Other patents referred to by Mr. Howard in the said Exhibit No. 130 are Dunham, May 26, 1891, No. 452,996, and Bayley, April 24, 1894, No. 518,774. These two patents relate to the same fundamental organization as the early Amazeen patent and contain features of addition with reference to the said Amazeen structure, and claims directed to said additional features are more or less specific. The early Amazeen patent, with reference to the later patents offered by Mr. Howard, is clearly fundamental in character and answers to the term or expression "pioneer".

*Int.* 19. Mr. Howard in his testimony in behalf of the defendant the United Company has testified at some length with reference to heeling machines and machines for attaching heels, etc., and in connection with such testimony various patents have been introduced upon which he has commented. Will you kindly examine the patents comprised in Plaintiff's Exhibit 251A and 251B, being patents specified in the lease agreement Plaintiff's Exhibit 240, and state what you find with reference to the art of heel attaching, and generally what you find disclosed in the patents of that exhibit as affecting the art testified to by Mr. Howard, and, if convenient, kindly classify the patents of said exhibit briefly?

Mr. PHILLIPS. Objected to as improper rebuttal and outside the scope of the order of the court.

*Ans.* In the Plaintiff's Exhibit 240 there are listed in Plaintiff's Exhibits 251A and 251B a great many patents relating to heelng machines, and I believe the number is approximately 300. The Plaintiff's Exhibit 240, as I understand it, is a lease conveying to the lessee the right to use two particular machines, one indicated as McKay heel compressing and loading machine and the other indicated as rapid nailing machine, the first machine being given the number in the lease 34 and the second being given the number in the lease 2555. As before noted, there are upwards of 300 patents stated in this lease, and the lease contains the following paragraph:—

"Fifth: The lessee hereby agrees as an essential part of the consideration for this lease and license, that he will not in any way violate or infringe or contest the validity of any of the patents hereinbefore referred to as belonging to the lessors or which may now or hereafter be owned by the lessors, or any reissue or extension of the same, or the title of the lessors to said patents or any of them."

I have examined all of the patents referred to in the lease of Plaintiff's Exhibit No. 240 and have attempted to make a general classification of the subjects-matter of the said patents. I may note in this connection that I have not classified the patents according to claimed structures, but simply according to general subjects-matter. Among the patents I find the following:—

Nineteen patents running to nail making and distributing machines, machines for making nail strips of flexible character, and machines which in structure are more or less allied to nail-making machines or have combined therewith other structures such as driving mechanism. These patents run, in date, from the year 1886 to the year 1889.

Four patents for burnishing tools or heel-burnishing machines or burnishing machines generally, the dates of which run from the year 1883 to the year 1897.

One patent for a machine for finishing heel bottoms, the date of which is in the year 1884.

Twenty-six patents having reference to trimmers or cutters for heelng machines, guards for the cutters, and in most instances rotary heel-cutting devices. These patents range in date from the year 1886 to the year 1893.

One patent for a heel-cutting die, dated in the year 1889.

One patent for a heel-filing machine, dated in the year 1888.

Two patents for a heel-breasting machine, dated in the years, respectively, 1881 and 1893.

Three patents for heel-loading machines, granted in the years 1886 and 1888.

Six patents for so-called top-lift holders, or heelng machines, or holders for such machines, or top-lift plates for use in such machines, the dates of which range through the years 1889 and 1890.

Seven patents for jacks, heelng blocks, last supports and similar devices, ranging through the years 1882 to 1894.

Four patents for nail distributors for heel-nailing machines, some of them also including driving mechanisms, these patents ranging through the years 1885 to 1887.

Four patents for machines for assorting nails, or nail-arranging devices, the dates of which are in the years 1887 to 1893.

One patent for machinery for assorting pieces of leather, dated in the year 1880.

Twenty-four patents for heel-trimming machines and sole-edge trimming machines, these patents running to a more or less general structure and ranging through the years 1882 to 1891.

Two patents for machines for feeding and attaching rands to boots or shoes, dated in the years, respectively, 1889 and 1892.

Two patents for heel-nailing machines, dated in the years, respectively, 1888 and 1892.

Nine patents for heel-attaching machines, ranging through the years 1881 to 1893.

Fifteen patents for heelng machines, so called, and apparently running to general subject-matter with reference to heel-attaching mechanisms, these patents ranging through the years 1882 to 1893.

Two patents on pegging machines, dated, respectively, in the years 1884 and 1888.

One patent for apparatus for assembling heel lifts, dated in the year 1889.

One patent for the method of making heel nail plates, dated in the year 1885.

Fifteen patents for the method of forming and attaching heels, running to different modes or processes for producing the functions stated, these patents ranging through the years 1887 to 1892.

Three patents for the method or process of laying out-soles or attaching soles, or attaching heels, ranging through the years 1885 and 1887.

Three patents for the method of manufacturing heels and for the so-called article spring-heel blanks, these patents ranging through the years 1886 to 1889.

One patent for the method of making rotary-toothed cutters, dated in the year 1893.

Two patents for the method of forming heel rands, dated in the year 1887.

Two patents for the process of making headed nails, or slugs, for shoes, dated in the years 1887 and 1892, respectively.

One patent for the process of manufacturing loaded heel blanks, dated in the year 1888.

One patent for so-called spring-heel boot or shoe, dated in the year 1889.

One patent for a heel blank, dated in the year 1891.

One patent for a machine for forming a pile of heels, or a heel pile, dated in the year 1880.

One patent running to a boot or shoe structure, dated in the year 1886.

Five patents for machines for molding and compressing heels, or for heel forming and attaching machines, ranging through the years 1881 to 1888.

Eight patents for heel forming and loading machines, ranging through the years 1888 to 1894.

Four patents for nail-feeding implements or separating and feeding machines or apparatus, ranging through the years 1888 to 1895.

Seven patents covering nail strips, so called, ranging through the years 1885 to 1892.

One patent for a nail holder or carrier, dated in the year 1885.

Two patents for nail dies to be used in heelng machines, dated in the years 1888 and 1889, respectively.

Eleven patents running to different structures of nails or fastenings for the heels of boots or shoes, and ranging through the years 1885 to 1892.

Three patents for nail distributing and feeding machines, dated in the year 1888.

Ninety patents for heel-nailing machines, including a myriad of structures, arrangements, mechanisms and devices in heel-attaching machines generally.

I have made no attempt, in the short time allotted to me, to determine in any manner the scope of the claims of these various patents, and have directed my attention, in consequence, simply to a general classification of the patents included within the lease of Plaintiff's Exhibit No. 240, and ostensibly running to the two leased machines to which I have heretofore referred.

I may add in this connection that, with the same idea in mind as stated by me in the foregoing, I have also examined some other leases, samples of which have been made exhibits by the petitioner, and note particularly the Plaintiff's Exhibit No. 26. This exhibit is simply a sample of lease and apparently runs to no particular lessee, but seems to be general in form. I have not been able to examine all the patents referred to in this lease, which I believe are upwards of 254, but have been able to obtain, in the short time allotted to me for the purpose of my testimony, only 138 of the patents. I have made the same general classification in connection with these 138 patents of the Plaintiff's Exhibit 26, and find among the same approximately twenty-six congeries of inventions, that is to say, there are twenty-six types or groups of machines or subjects-matter of invention among the said 138 patents of the said exhibit. I will make no attempt at this time to indicate the various groups of patents under their titles, but simply refer to the same as an example of the patents included within

such leases as have come to my notice as having been made between the defendants as lessor and certain purchasers of the defendants' machines as lessees.

Mr. PHILLIPS. Answer objected to as irresponsible to the interrogatory and volunteered on the part of the witness, as relating to matters entirely without the order of the court, and as assuming to construe written instruments, which construction, if of any materiality, would be purely a question of law for the court.

Mr. WEBSTER. This will close the direct examination of this witness unless through inadvertence, accident or mistake counsel for the petitioner has omitted to interrogate the witness, and as to such matters he will pray the indulgence of counsel and of the court, if necessary, at some later period. Counsel for defendant is invited to cross-examine.

[*Adjourned to 10 o'clock A. M., Tuesday, November 18, 1913.*]

BOSTON, MASS., November 19, 1913.

Mr. WEBSTER. Counsel for the petitioner states that he was, on Monday last, advised by telephone by counsel for defendant that counsel for defendant did not wish to cross-examine Mr. Chapman, the last witness produced by the petitioner, and that the witness' signature to the deposition will be waived and he need not be produced at this sitting.

Mr. PHILLIPS. Counsel for defendant repeats this statement.

[*Signature waived.*]

Attest: CHARLES K. DARLING, *Special Examiner.*

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DEPOSITION OF LAWRENCE BANNICAN.

*Direct Examination by ALLEN WEBSTER, Esq., of Counsel for Complainant.*

*Int.* 1. Your name is Lawrence Bannican, and you reside in Whitman, Massachusetts?

*Ans.* Yes, sir.

*Int.* 2. Where are you now employed?

*Ans.* At the Commonwealth Shoe & Leather Company, Whitman.

*Int.* 3. For how many years have you worked in the factory at Whitman?

*Ans.* Thirty-one years.

*Int.* 4. Have you during your employment operated machines known as "welt and turn machines"?

*Ans.* Yes, sir.

*Int.* 5. For how many years have you operated welt and turn machines?

*Ans.* Twenty-four.

*Int.* 6. Please examine the photograph I now hand you, the same being marked "Plaintiff's Exhibit 232", and state whether it is, to your knowledge, a photograph of a machine in the factory in which you are employed.

*Ans.* [Witness examines exhibit.] Yes, sir.

*Int.* 7. Do you know the number of the machine of which said exhibit is a photograph?

*Ans.* Yes, sir.

*Int.* 8. What is the number of the machine?

*Ans.* 228.

*Int.* 9. State whether the welt and turn machines operated by you were like said machine 228.

*Ans.* Yes, sir.

*Int.* 10. How many welt and turn machines like said machine No. 228 are at the factory of the Commonwealth Shoe & Leather Company at Whitman, Massachusetts, where you are employed?

*Ans.* Twelve.

*Int.* 11. Please examine the copy of patent to Z. T. French, sewing machine, dated June 2, 1896, No. 561,386, which I now hand you, and state whether you understand the construction of the looper-heater mechanism shown in the drawings of said patent.

Mr. PHILLIPS. Question objected to as outside the order of the court, and because the witness is not qualified to express any opinion with regard to constructions shown and described in Letters Patent.

*Ans.* I do.

*Int.* 12. Please state whether the twelve welt and turn machines

at the factory at Whitman where you are employed are equipped with looper-heater mechanism such as is shown in the drawings of the patent referred to in the last question.

Mr. PHILLIPS. Objection repeated.

Ans. Well, they are, part of them, broken off.

Int. 13. How many are broken off?

Ans. There is five in the twelve.

Int. 14. State, if you know, whether any of the heater blocks or plates in any of the machines at the Whitman factory come in contact, when the machine is in operation, with the looper carrier lever.

Mr. PHILLIPS. Objection repeated.

Ans. No, sir, they don't.

Int. 15. You say in a previous answer that some of the plates of the looper-heater mechanism were broken off; please state what part of the plate was broken off.

Mr. PHILLIPS. Objection repeated.

Ans. Well, it is the front part, facing the machine.

Int. 16. Is the front part referred to by you the part of the heater block or plate that extends to a position to heat the looper carrier if the plate was intact?

Mr. PHILLIPS. Objected to as leading, and for the reasons heretofore stated in connection with the objection to the preceding interrogatory.

Ans. Yes, sir.

Int. 17. State the length of the part of the heater block or plate which has been broken off, as stated by you.

Ans. Well, I should answer that it was possibly an inch or an inch and a half.

Int. 18. State whether you have operated a welt and turn machine having the heater plate complete and not broken off.

Ans. Yes, sir.

Int. 19. State whether you have operated a welt and turn machine having the heater block or plate broken off.

Ans. Yes, sir.

Int. 20. State whether the machine operates any differently with the plate on or off.

*Ans.* I don't see any difference..

*Int.* 21. For how long have you operated a welt and turn machine of the kind testified to by you wherein the heater plate was broken off?

*Ans.* Somewhere in the neighborhood of eight or nine years.

*Int.* 22. Are the twelve welt and turn machines referred to by you at the Whitman factory provided with any plates upon which there is any marking or lettering?

*Ans.* There are plates; United Shoe Company plates, and Goodyear Shoe Company plates, I think.

*Int.* 23. State how many, if you know, are marked with the United Company plates.

*Ans.* There are four with the United Shoe Machinery plates and no others; five machines with Goodyear plates on and no others; three machines with Goodyear and United Machine plates.

*Int.* 24. Please examine the copy of patent I now hand you, the same being patent to H. Briggs, take-up shoe sewing machines, dated April 24, 1894, No. 518,911, and state whether you understand the construction as shown in the drawings of said patent, especially with reference to the spring-pressed plunger marked "d".

Mr. PHILLIPS. Objected to as improper rebuttal, as outside the order of the court, and because the witness is not qualified to express any opinion with regard to constructions disclosed in Letters Patent.

*Ans.* [Witness examines the patent and says:] Yes, sir; I do.

*Int.* 25. State whether the twelve welt and turn machines at the Whitman factory are provided with a spring-pressed plunger mechanism like that shown in the drawings of the patent examined by you.

Mr. PHILLIPS. The objection to the preceding interrogatory is repeated.

*Ans.* No, sir.

*Int.* 26. State whether any of the twelve welt and turn machines referred to by you were ever, to your knowledge, provided with the spring-pressed plunger mechanism referred to.

Mr. PHILLIPS. Same objection repeated.

*Ans.* Yes, sir.

*Int.* 27. State what changes, if any, to your knowledge, have been made with reference to the spring-pressed plunger mechanism in the twelve machines, or any of them, referred to by you.

Mr. PHILLIPS. Please note the same objection.

*Ans.* In some of them this plunger has been taken out and the front part filled in with a plug or screw.

*Int.* 28. Have you operated a welt and turn machine which was provided with the spring-pressed plunger mechanism referred to?

Mr. PHILLIPS. Question objected to as improper rebuttal, as outside the order of the court, and because of lack of qualification of the witness.

*Ans.* Yes, sir.

*Int.* 29. Have you operated a welt and turn machine which was not provided with the spring-pressed plunger mechanism referred to?

Mr. PHILLIPS. Objection repeated.

*Ans.* Yes, sir; I have.

*Int.* 30. For how long a time have you operated a welt and turn machine which was not provided with the spring-pressed plunger mechanism?

Mr. PHILLIPS. Same objection.

*Ans.* I could not state exactly. I operated the machine before it was ever put on there.

*Int.* 31. Is the machine now being operated by you provided with the spring-pressed plunger mechanism?

Mr. PHILLIPS. Same objection.

*Ans.* Yes, sir.

*Int.* 32. Have you operated any of the welt and turn machines which at one time were provided with the spring-pressed plunger mechanism after such mechanism was removed from the machine?

Mr. PHILLIPS. Objected to as improper rebuttal and outside the order of the court.

*Ans.* Yes, sir; I have.

*Int.* 33. State whether the presence or absence of the spring-

pressed plunger mechanism makes any difference in the operation of the machine.

Mr. PHILLIPS. Objected to as improper rebuttal, outside the order of the court, and immaterial, incompetent and irrelevant.

*Ans.* Not that I can see.

*Int.* 34. Do you know whether the welt and turn machine No. 228 at the Whitman factory, of which Plaintiff's Exhibit 232 is a photograph, has had a new centre head within the last few years?

Mr. PHILLIPS. Objected to as improper rebuttal, outside the order of the court, as immaterial and incompetent, and because of lack of qualification of the witness.

*Ans.* It has; about three years ago it had a new centre head.

*Int.* 35. Is the new centre head which you say was put on machine No. 228 about three years ago provided with the spring-pressed plunger mechanism?

Mr. PHILLIPS. Same objection, and further objected to as being leading.

*Ans.* No, sir, it is not.

*Int.* 36. What is the number of the machine operated by you, if you know?

*Ans.* 2217.

*Int.* 37. How long have you operated that machine?

*Ans.* About five years.

*Int.* 38. State, if you know, what number of stitches the welt and turn machine operated by you and referred to in the last answer makes per minute.

Mr. PHILLIPS. Objected as improper rebuttal, outside the order of the court, and incompetent and immaterial.

*Ans.* About 400.

*Int.* 39. Can you state, from your twenty-four years' experience in operating welt and turn machines, what is the fair average capacity of the welt and turn machine like that operated by you, by an average skilled operator in a day of nine hours?

Mr. PHILLIPS. Question objected to as improper rebuttal, outside the order of the court, and because the witness is not qualified

to express an opinion as to the matter inquired about, and as being incompetent and immaterial.

*Ans.* Four dozen pairs an hour.

*Mr. WEBSTER.* You may cross-examine.

*Cross Examination (de bene esse) by BENJAMIN PHILLIPS, Esq., of  
Counsel for Defendants.*

*Cross-Int.* 40. How long did you say you had been running machine No. 2217?

*Ans.* I said nearly five years; possibly more. I could not state the exact time.

*Cross-Int.* 41. The same machine?

*Ans.* Yes, sir.

*Cross-Int.* 42. In what condition is that machine now in regard to the looper-heating plate; is there a looper-heating plate on the machine?

*Ans.* It is broken off.

*Cross-Int.* 43. Did you break it off yourself?

*Ans.* Yes, sir.

*Cross-Int.* 44. How long ago?

*Ans.* I think very soon after I got the machine.

*Cross-Int.* 45. How much of the looper-heating plate is broken off?

*Ans.* From an inch to an inch and a half.

*Cross-Int.* 46. Do you know what the catalogue number of the looper-heating plate is?

*Ans.* I could not inform you.

*Cross-Int.* 47. Who orders the parts in the Commonwealth factory, if you know?

*Ans.* We tell the foreman if we want parts.

*Cross-Int.* 48. That is, the operator tells the foreman and then the parts are ordered through the foreman?

*Ans.* Yes, sir.

*Cross-Int.* 49. What is the name of the foreman under whom you are now working?

*Ans.* Harvey D. Reed.

*Cross-Int.* 50. Is there any system in the Commonwealth Shoe factory in regard to giving out the work to welters?

*Ans.* Yes, sir.

*Cross-Int.* 51. What is it?

*Ans.* It is what we call "passing the buck"; that is, a wire that is hung up in front of each man's machine. As the tacks are pulled and ready for them, he runs the shoes out and marks them, the number of them, and then he removes the buck to the next machine.

*Cross-Int.* 52. How many pairs of shoes does each operator get in a day, according to that system?

*Ans.* Twenty-four to twenty-six dozen.

*Cross-Int.* 53. Will you please explain a little more fully about the system of passing the buck? I do not quite understand.

*Ans.* The shoes are trimmed and the tacks are pulled. The tack puller gets his case ready and runs it down the line. Wherever this buck is hanging in front of a machine, he marks it to that machine. Then he goes back and removes it to the next machine. The next work that comes out goes to the next machine, and so on down the line, and then it is brought back to number one.

*Cross-Int.* 54. So that each operator gets a certain number of shoes, and gets them in rotation?

*Ans.* Yes, sir.

*Cross-Int.* 55. Do you know how many of the looper-heater plates have been purchased by the Commonwealth Shoe Company within the past year?

*Ans.* No, sir.

*Cross-Int.* 56. You do not know, then, to what extent they have been called for by the other operators and by the foreman?

*Ans.* No, sir; I don't.

*Cross-Int.* 57. Do you know what an auxiliary take-up is in the welt and turn sewing machine?

Mr. WEBSTER. Objected to as going into matter not touched upon in the direct examination, unless counsel shall specify that he has reference to the spring-pressed plunger mechanism when using the term "auxiliary take-up".

Mr. PHILLIPS. This question, of course, is asked *de bene esse*,

without waiving any objections, but I refer particularly to the language "auxiliary take-up" used in the Briggs patent No. 518,911.

*Ans.* It is to hold the slack thread.

*Cross-Int.* 58. What do you mean by that?

*Ans.* I mean it is slack thread when this take-up pulls it up. When it comes down there is a slack thread and this auxiliary comes down and holds it taut.

*Cross-Int.* 59. What is the object of holding it taut?

*Ans.* To keep it from dropping off of your needle; keep it tight on your needle.

*Cross-Int.* 60. Keep it from mislooping?

*Ans.* Skipping, as we call it.

*Cross-Int.* 61. What is the effect on the work done by a machine if this mislooping or skipping occurs?

*Ans.* It leaves skipped stitches.

*Cross-Int.* 62. Does it affect the quality of the work any?

*Ans.* Yes, sir.

*Cross-Int.* 63. It makes imperfect work?

*Ans.* Makes imperfect work.

*Cross-Int.* 64. Do you know what the object is of heating the looper in the machine which you state you have been running?

*Ans.* Yes, sir; I do.

*Cross-Int.* 65. What is it?

*Ans.* To keep it clear from wax.

*Cross-Int.* 66. Just what do you mean by that?

*Ans.* A cold looper will collect wax from the thread; stick to it; clog it up.

*Cross-Int.* 67. And what effect does that have on the operation of the machine?

*Ans.* It makes the thread draw hard; liable to snap it.

*Cross-Int.* 68. Liable to make the machine break thread?

*Ans.* Yes, sir.

*Cross-Int.* 69. Did you ever see a gas flame used for the purpose of heating the looper?

*Ans.* A gas flame in the head of the machine; yes, sir.

*Cross-Int.* 70. Just state briefly how it was heated with the gas flame.

*Ans.* It was a gas flame in the head of the machine, and I don't know whether you observed that hole in that machine right there. [*Witness points to a hole that appears in photograph, which is at the base of the head of the machine, and immediately in front thereof.*] That originally was intended for a hollow pipe, bent about that shape [*bent in about the shape of a curved finger*]. The heat comes from that, and I have run them, and it always kept it clear; always kept those parts clear. If the heat was there, it was properly heated.

*Cross-Int.* 71. Didn't the operators find considerable fault with that arrangement, owing to heated air rising in their faces?

*Ans.* It heated the machine up a great deal more, the whole machine.

*Cross-Int.* 72. And made it harder to run?

*Ans.* Not necessarily.

*Cross-Int.* 73. Hotter?

*Ans.* Made it hotter.

*Cross-Int.* 74. Well, isn't it true that you had to breathe the air that came up through the pipe and passed over the looper?

*Ans.* No; I had to breathe it some, of course, surely; the fumes from it.

*Cross-Int.* 75. Do you know what is meant by "operator's slip"?

*Ans.* As I understand, the royalty book.

*Cross-Int.* 76. Did you keep any record of the number of pairs of shoes sewed by you on the welt machine upon which you said you worked?

*Ans.* I have put them down every day; supposed to. I have them on a book, and copy them off.

*Cross-Int.* 77. You put down a written memorandum of the number of pairs?

*Ans.* Yes; figure them up every day.

*Cross-Int.* 78. Did you sign those memoranda or slips?

*Ans.* Yes, sir.

*Cross-Int.* 79. Will you look at the paper I now hand you and

state whether the signature in lead pencil at the bottom of the paper is your signature? [Witness examines paper.]

*Ans.* Yes, sir.

*Cross-Int.* 80. And to explain this memorandum, it means that on the 1st of July, 1911, you stitched 140 pairs?

*Ans.* Yes, sir.

*Cross-Int.* 81. And on the 2d day six pairs?

*Ans.* No, sir; that I put down to signify Sunday.

*Cross-Int.* 82. On the 10th, 191?

*Ans.* Yes, sir.

*Cross-Int.* 83. On the 11th, 193?

*Ans.* Yes, sir.

*Cross-Int.* 84. On the 12th, 231?

*Ans.* Yes, sir.

*Cross-Int.* 85. On the 13th, 218?

*Ans.* Yes, sir.

*Cross-Int.* 86. On the 14th, 253?

*Ans.* Yes, sir.

*Cross-Int.* 87. And so on, down the column?

*Ans.* Yes, sir.

*Cross-Int.* 88. So that the figures in lead pencil under the heading "men" represent the number of welted shoes which you sewed on a date which is given in the opposite column?

*Ans.* The opposite date; yes, sir.

[*Bannican slip for July, 1911, is offered in evidence, and marked "Defendants' Exhibit 204".*]

*Cross-Int.* 89. I show you another paper; will you please state whether the signature "L. Bannican" is your signature?

*Ans.* Yes, sir.

*Cross-Int.* 90. And that slip is of the same character; the figures in the column marked "men" indicate the number of pairs of welt shoes which you sewed on a day, the date of which appears in the first column?

*Ans.* Yes, sir.

[*Bannican slip of April, 1911, is offered in evidence, and marked "Defendants' Exhibit 205".*]

*Cross-Int.* 91. I show you a similar slip for September, 1911; will you state whether the signature that appears at the bottom is your signature?

*Ans.* Yes, sir.

*Cross-Int.* 92. That slip indicates the number of pair of men's shoes that you sewed in the month of September, 1911?

*Ans.* Yes, sir.

[*Bannican slip for September, 1911, is offered in evidence, and marked "Defendants' Exhibit 206".*]

*Cross-Int.* 93. I show you another slip of January, 1913, and ask you if the signature "L. Bannican" at the bottom of the slip is your signature?

*Ans.* My signature; yes, sir.

*Cross-Int.* 94. And this slip indicates the number of pairs of welt shoes that you sewed in January, 1913?

*Ans.* Yes, sir.

[*Bannican slip for January, 1913, is offered in evidence, and marked "Defendants' Exhibit 207".*]

*Cross-Int.* 95. I hand you a slip for April, 1913, and ask you if the signature "L. Bannican" is your signature?

*Ans.* Yes, sir.

*Cross-Int.* 96. And whether that slip indicates the number of pairs of welt shoes which you sewed in that month?

*Ans.* It does; yes, sir.

[*Bannican slip for April, 1913, is offered in evidence, and marked "Defendants' Exhibit 208".*]

*Cross-Int.* 97. I hand you another slip for April, 1912, and ask you if the signature "L. Bannican" is your signature, and whether that slip indicates the number of pairs of welted shoes which you sewed in that month?

*Ans.* Yes, sir.

[*Bannican slip for April, 1912, is offered in evidence, and marked "Defendants' Exhibit 209".*]

*Cross-Int.* 98. I show you another slip of August, 1912, and ask you if the signature "L. Bannican" is your signature?

*Ans.* Yes, sir.

*Cross-Int.* 99. And that slip indicates the number of pairs of welt shoes that you sewed during the month of August, 1912?

*Ans.* Yes, sir.

[*Bannican slip for August, 1912, is offered in evidence, and marked "Defendants' Exhibit 210".*]

Mr. PHILLIPS. That is all.

*Direct Examination resumed by Mr. WEBSTER.*

*Int.* 100. What kind of shoes do you operate on?

*Ans.* Men's shoes.

*Int.* 101. Are they the regular run, or do you work on samples?

*Ans.* I work on samples altogether when we are running.

*Int.* 102. Can a man do as much work on sample shoes as on the regular run of shoes?

*Ans.* I cannot.

*Int.* 103. What is your age?

*Ans.* My age is fifty-two last March.

*Int.* 104. State whether the shoes referred to in the slips which have been introduced in evidence were sample shoes.

*Ans.* I could not state as to that. Sample shoes and all are put right in together when I figure them up. If I did not have enough samples I took a regular case to fill out my day.

Mr. WEBSTER. Nothing further.

*Cross Examination resumed by Mr. PHILLIPS.*

*Cross-Int.* 105. What do you mean by sample shoes?

*Ans.* The shoes that they send out for samples, and one-pair lots, and I suppose what they call jobbers' samples, eighteen-pair lots and twelve-pair lots, as they come along; also one-pair lots of special shoes, ten days, not sample but special order. That is what I work on.

Mr. PHILLIPS. That is all.

Mr. WEBSTER. This, as at present advised, closes the evidence in rebuttal before the examiner in behalf of the petitioner, with the exception of the introduction of some patents which counsel has not been able to procure up to the present time.

Mr. PHILLIPS. The signature to this deposition is waived. As far as I am at present advised, this closes the defendants' case before the examiner.

[*Signature waived.*]

Attest: CHARLES K. DARLING, *Special Examiner.*

It is stipulated by and between counsel that, if the court assents, the various interrogatories propounded by counsel for the petitioner to the witness Howard before the examiner, and which questions the witness declined to answer under instruction of counsel, may be propounded to the witness at the hearing in open court hereafter, thus avoiding the delay incident to procuring a ruling of the court in the matter and rendering it more convenient for court and counsel.

Hearing closed.

ADDITIONAL EVIDENCE FOR DEFENDANTS.

TAKEN PURSUANT TO ORDER OF COURT, ENTERED FEBRUARY  
10, 1914, BEFORE ME,

CHARLES K. DARLING,

*Special Examiner.*

Present : BOSTON, MASS., February 25, 1914.

ALLEN WEBSTER, Esq., *Special Assistant to the Attorney General*,  
WILLIAM S. GREGG, Esq., *Assistant to the Attorney General*,  
*of Counsel for Complainant*;  
FREDERICK P. FISH, Esq., and BENJAMIN PHILLIPS, Esq.,  
*of Counsel for Defendants.*

DEPOSITION OF NELSON W. HOWARD (*resumed*).

Mr. WEBSTER. Counsel for the United States gives notice that it reserves its right to insist upon its motion to strike out and suppress; and that the cross-examination of witnesses for the defendants and direct examination of witnesses for the plaintiff will be *de bene esse* and without waiver of objections made or to be made and without waiver of said motion to strike out and suppress. And counsel for the plaintiff gives notice that the plaintiff will especially insist on striking out of testimony with reference to matters and things taken under patents issued after the date of the filing of the bill herein; and to strike out all evidence with reference to machines made in accordance with and as shown in patents issued after the filing of the bill; also as shown in applications which were pending at the filing of the bill. It will also insist upon its motion to remove from the record all patents put in evidence as exhibits by the defendants which were issued after the filing of the bill herein, and also of other exhibits relating to matters taking place after the filing of the bill.

Mr. FISH. Counsel for respondents calls the attention of the

Court to the order of the court entered in the record January 14, 1914.

*Cross Examination by ALLEN WEBSTER, Esq., of Counsel for Complainant.*

*Cross-Int.* 437. In direct examination you testified at some length with reference to Plant patent for stopping mechanism, dated November 16, 1909, No. 940,052. It is not clear to me whether you intended to testify that the mechanism of the claims of that patent was incorporated in the welt and turn machine and the rapid out-sole stitcher of the United Company. Will you kindly state the fact?

*Ans.* I do not recall that I have ever referred to patent No. 940,052 at any point in my testimony.

*Cross-Int.* 438. In your testimony in chief you, as I recollect it, made reference to the Plant mechanism for stopping the machine. Did you have reference to the Plant mechanism as shown in the patent referred to? Or, in order to shorten the examination, will you kindly state whether as a fact the mechanism of the Plant patent No. 940,052 was incorporated by the United Company in its welters and out-sole stitchers?

Mr. PHILLIPS. Counsel for defendants objects to that as not within the scope of the order.

*Ans.* That patent No. 940,052 was not the patent which I had in mind in my testimony in regard to the Plant stop motion, and no claims of patent No. 940,052 set forth mechanism which is embodied in the United Company's machines, so far as I am aware.

*Cross-Int.* 439. In your testimony in chief you have made reference to the Plant patent dated May 17, 1910, No. 958,298, entitled "Sewing Machine", but relating, as I understand it, particularly to a welt-holding, welt-measuring and welt-cutting device. Will you kindly point out on the record what particular claims of that patent define the mechanism which was embodied in the machines of the United Company?

*Ans.* Claims 1, 2, 3, 4, 5, 6, 7, 13, 15, 16, 17, 19, 21, 27 and 30.

*Cross-Int.* 440. Will you now kindly state when the mechanisms

defined in the claims referred to by you in your last answer were incorporated in the machines of the United Company? That is to say, whether before or after the Plant acquisition.

**Mr. PHILLIPS.** Question objected to as not within the scope of the order under which this testimony is to be taken.

*Ans.* The mechanisms defined in the claims of patent No. 958,-298, May 17, 1910, Plant, were first embodied in commercial machines of the United Company in June, 1911, during which month shoe machine, model K, Goodyear welt and turn, became the standard commercial welting machine of the United Company.

*Cross-Int.* 441. I observe that the claims referred to by you, or many of them, include "the combination of stopping and starting means". Have you any objection to stating in a general way and briefly what "stopping and starting means" was in fact incorporated in the United machine referred to by you, viz.: "Model K Welter"?

*Ans.* The starting and stopping machine of the model K welting machine was of the character shown generally in patent No. 1,018,-130, February 20, 1912, Plant, and comprised mechanism for stopping the machine and then reversing it for the purpose of freeing the needle of the machine from the last loop formed by the stitch-forming instrumentalities.

*Cross-Int.* 442. Do you mean by your last answer to convey the idea that the starting and stopping mechanism incorporated in the United machine contained the spring-acting mechanism as illustrated in Figure 5 of the Plant patent No. 1,018,130?

*Ans.* No. The specific construction of the mechanism embodied in the model K weler and incorporating the improvement set forth in all four claims of patent 1,018,130 was quite different from the mechanism shown in Figure 5 of that patent.

*Cross-Int.* 443. For convenience in illustrating the construction of stopping and starting mechanism which is in fact incorporated in the model K United weler, will you kindly state whether there is to your knowledge any patent issued or drawings readily accessible which illustrates such starting and stopping mechanism?

*Ans.* No patent has as yet been issued which shows in its draw-

ings the exact construction of the starting and stopping mechanism of the model K welter.

*Cross-Int.* 444. You testified, as I recollect it, that applications for patent for the mechanism referred to in the last question and answer were pending. Have you any objection to producing copies of such applications for inspection and to enable counsel to refer to the drawings for the purpose of illustrating such construction?

Mr. PHILLIPS. Objected to as not within the scope of the order, and as calling for the production of matter which cannot under this order be required.

*Ans.* I am reluctant to produce and make public drawings of applications pending in the United States Patent Office, but I can do that if necessary. I would like to make a statement on the record, however, to the effect that the model K welting machine has been placed at the disposal of counsel and experts for the United States and that its construction and operation have been fully explained, the explanation being accompanied by taking the machine apart and illustrating in detail the mode of operation of the respective parts.

Mr. WEBSTER. Counsel for the plaintiff admits that the defendants have very courteously afforded counsel for the plaintiff every convenience and facility for the examination of the machine referred to, but in view of the fact that the witness has testified that various machines, including the one referred to, were constructed as shown in the claims, and in some instances in allowed claims, of pending applications for patent, it would seem but fair that counsel for the plaintiff have an opportunity to examine such applications in order to determine whether to proceed with the examination in reference to the claim, or whether to submit evidence to meet the testimony of the witness in reference to such applications; and in order to raise the question at this stage as to all such pending applications, counsel for the plaintiff desires the witness or opposing counsel to state on the record whether such pending applications will be produced for examination by counsel for the plaintiff to enable counsel to proceed with his examination with reference thereto,

and to enable the Court to learn whether the testimony of the witness is in accordance with the facts.

Mr. PHILLIPS. I should like to have you point out the portion of the witness' testimony in which he has testified as to the pendency of any applications for United States Letters Patent involving the mechanism referred to.

Mr. WEBSTER. The question goes generally to pending applications, and counsel for the plaintiff would like very much to learn the attitude of counsel for the defendants with reference to pending applications, thus avoiding spreading upon the record a vast number of interrogatories which seem to be unnecessary.

Mr. PHILLIPS. I recall no such testimony, Mr. Webster. My objection is directed to this specific question. It seems to me that the only proper way to take up the matter is specifically, and not generally.

Mr. WEBSTER. Counsel for the plaintiff states that he is unable at the present moment to refer to the particular portion of the record called for by counsel for the defendants, but will endeavor to ascertain just where it is and call attention of counsel to it at a later stage in this hearing.

Mr. PHILLIPS. In view of the fact that the witness has not testified that there were any pending applications for United States Letters Patent relating to this mechanism, and in view of the fact that a complete disclosure has been made to counsel for the plaintiff of the mechanism involved which has been explained to him by experts and which mechanism is still open for his examination, counsel for the defendants objects to the production of pending applications if there are any relating to said mechanism. Counsel for the plaintiff may have any drawings which he desires prepared from the machine itself, which will be open to his inspection and the inspection of any experts whom he may care to have examine it at any time.

Mr. WEBSTER. Counsel for the plaintiff reserves the right to move to strike out all testimony with reference to pending applications for patents, or machines constructed as shown in pending

applications, on the ground that the defendants decline to submit the machine for inspection on cross-examination.

Mr. PHILLIPS. Counsel for defendants calls attention to the fact that the defendants do not decline to produce pending applications.

*Cross-Int.* 445. Kindly state whether the model K welt and turn machine as constructed by the United Company contains the mechanism shown in claim 1 of the patent to Plant referred to No. 1,018,130, dated February 20, 1912.

*Ans.* Yes, sir; it does.

*Cross-Int.* 446. Then it is a fact, is it, that this machine as constructed contains a member adapted to free the last needle loop from the stitch-forming devices?

*Ans.* The word "member" does not occur in the claim in question. Adopting the language of that claim, it is a fact that the model K welter embodies "means, acting automatically upon stopping the machine, to free the last needle loop from the stitch forming devices and bring the needle to rest out of engagement with the work".

*Cross-Int.* 447. Will you kindly define briefly what "means" are employed in the mechanism of the machine in question, model K welter, to free the last needle loop from the stitch-forming devices?

*Ans.* Generally speaking, the "means" comprises mechanism for stopping the forward movement of the machine at the proper point, and then reversing the machine. That is, running it backward in such manner and in such time relation to the stitch-forming instrumentalities that the needle is freed from the last needle loop formed by the stitch-forming instrumentalities.

*Cross-Int.* 448. Is it not a fact that in the machine as constructed the retraction of the needle takes place just before the loop would have been formed in the hook of the needle, had the needle continued in its forward motion?

Mr. PHILLIPS. Question objected to as ambiguous.

*Ans.* No, sir; I should not consider that to be the fact. I will add, however, that what is specifically aimed at in the model K welter, as in the Plant welter, is to free the last loop formed from the needle.

*Cross-Int.* 449. As a matter of fact, if the machine is stopped just before the loop would be thrown into the hook of the needle had the needle continued its forward movement and the machine is then reversed, the object sought to be obtained by the patent No. 1,018,130 would be accomplished, would it not?

*Ans.* Yes, sir; because the last loop formed will be freed from the needle if the needle is first moved forward to a point in engagement with the work or any point beyond, provided the forward operations of the machine do not continue to the point where a new loop is taken by the needle, and consequently the needle is then moved back from that point without a new loop. The result of this operation will be the freeing from the stitch-forming instrumentalities of the last loop formed.

Mr. WEBSTER. All that portion of the foregoing answer following the words "Yes, sir", objected to as not responsive, and counsel for plaintiff moves that all that portion of the answer following the words "Yes, sir" be stricken from the record.

*Cross-Int.* 450. Referring to the paper put in by the defendant and marked "Defendants' Exhibit 342", entitled "United States Patents acquired in the Plant acquisition, the inventions of which have been incorporated in machines of the United Shoe Machinery Company", I note the first patent in the exhibit referred to is No. 944,294, December 28, 1909, Stewart and Hooper. Have you a copy of that patent?

*Ans.* I have.

*Cross-Int.* 451. Will you kindly state which one of the claims of said patent defines the mechanism which, as I understand you, you say was incorporated in the machines of the United Shoe Machinery Company?

*Ans.* All of the twenty-seven claims of that patent.

*Cross-Int.* 452. Kindly state whether a heel-beading machine for heel seats is a machine such as is known as an auxiliary machine.

*Ans.* I don't know as I quite understand the question as applied to this machine, but a satisfactory answer may be that this machine is put out by the United Company's general department.

*Cross-Int.* 453. And it is used for producing an ornamental or beaded edge?

*Ans.* That is one object, but probably not the principal object, of its use.

*Cross-Int.* 454. Please state the principal object.

*Ans.* In addition to forming an ornamental impression on the edge of the out-sole around the heel seat, the machine beads down and rubs waxed blacking into the projecting upper edge of the flesh side of the out-sole in what is known as the Rand crease, thus closing up the open pores of the flesh side of the out-sole, so that it will not so readily absorb moisture. Each of these operations is illustrated in Defendants' Exhibit 110.

*Cross-Int.* 455. Referring now to finishing and brush cleaning machine, model X, Climax, kindly state what the claims of the patent No. 957,989, May 17, 1910, McLeod, were which were incorporated in the machine of the United Company and when so incorporated.

*Ans.* All the six claims of patent No. 957,989, May 17, 1910, McLeod, set forth mechanisms embodied in the United Company's finishing and brush cleaning machine, model X, Climax. This machine was adopted in January or February, 1911. I can furnish the exact date if desired.

*Cross-Int.* 456. Kindly state briefly what the finishing and brush cleaning machine is designed to accomplish.

*Ans.* This machine is used for polishing by brushing stain or finish applied to the bottom of a shoe. The machine has provision for cleaning the brushes by steam or water.

*Cross-Int.* 457. And did the finishing and brush cleaning machine of the McLeod patent above referred to take the place of some other machine adapted for a like purpose, or was it entirely new in the art, so far as you are informed?

*Ans.* It was an improved machine for doing work which had previously been performed by other machines.

*Cross-Int.* 458. Will you kindly state whether the beading machine of the Stewart and Hooper patent heretofore referred to by

you took the place of some other machine designed to accomplish a like result, or whether it was a distinct improvement in the art?

*Ans.* I think I can properly answer in the affirmative both questions contained in the last interrogatory.

*Cross-Int.* 459. Then it did supplant some prior machine adapted for accomplishing a like result; is that right?

*Ans.* Yes, sir.

*Cross-Int.* 460. Referring now to your memorandum, grinding machine, model H, Imperial, patent No. 944,238, December 21, 1909, Heys, kindly state what the machine of that patent was used for.

*Ans.* That machine is used to grind the knives used on the Imperial power heel-breasting machine.

*Cross-Int.* 461. That is to say, it is a grinding machine for grinding blades; is that right?

*Ans.* Yes, sir.

*Cross-Int.* 462. And the novel feature comprised the construction whereby the two opposite edges of the blade could be presented at different angles; is that right?

Mr. PHILLIPS. Objected to as not within the scope of the order of the court under which this testimony is being taken.

*Ans.* No, sir. The novel improvements embodied in grinding machine, model H, Imperial, were for the purpose of enabling that machine to operate properly upon the transversely-curved knives such as are used in heel-breasting machines, the grinding of which presents peculiar difficulties not ordinarily encountered.

*Cross-Int.* 463. When did the United Company first put out the grinding machine of the Heys patent No. 944,238, so far as you are informed?

*Ans.* The machine has embodied the invention of the Heys patent No. 944,238 ever since the date of the Plant acquisition.

*Cross-Int.* 464. And did that machine take the place of some machine used before that date for accomplishing a like result?

*Ans.* It is my recollection that before the adoption of that machine it was the practice for the operator to guide by hand, practi-

cally without any aid from the machine, the knife which he was sharpening.

*Cross-Int.* 465. Grooving and beveling machine, model X, Goodyear welt, patent No. 966,484, August 9, 1910, Stanbon. Kindly state what part of the shoe this machine operated upon.

*Ans.* This machine operates upon the welt before its attachment to the shoe to prepare it for the attaching operation.

*Cross-Int.* 466. And does it operate to cut a groove lengthwise of the welt and also to bevel the welt at the same time?

*Ans.* Yes, sir.

*Cross-Int.* 467. Did this machine take the place of some machine used before that time to accomplish a like result?

*Ans.* The machine was an improved machine for performing an operation which had previously been performed by other machines.

*Cross-Int.* 468. Kindly state whether the machine of the Stanbon patent No. 966,484 was adopted by the United Company and put into use before or after the Plant acquisition.

*Ans.* After the Plant acquisition.

*Cross-Int.* 469. If you have the patent before you, will you kindly state whether the mechanism of the grooving and beveling machine put out by the United Company has incorporated in it the mechanism of all the claims of the Stanbon patent referred to?

Mr. PHILLIPS. Question objected to as not within the scope of the order under which testimony is being taken.

*Ans.* Yes, sir; it does.

*Cross-Int.* 470. Kindly state whether the grooving and beveling machine of the Stanbon patent referred to as put out commercially is constructed as shown in the Stanbon patent.

Mr. PHILLIPS. Question objected to as not within the scope of the order under which testimony is being taken.

*Ans.* No, sir; not exactly.

*Cross-Int.* 471. Referring now to indenting and burnishing machine, model X, Goodyear welt, made as I understand your memoranda under patent to Heys No. 860,377, July 16, 1907, and under an application pending in the name of Heys and McClure,

serial number 631,395, June 5, 1911, will you kindly state whether the patent has yet issued on the application referred to?

*Ans.* No, sir; it has not.

*Cross-Int.* 472. Kindly state when the indenting and burnishing machine referred to by you as model X and made under such patent and application went into use or was put out by the United Company.

*Ans.* It was first put out by the United Company March 31, 1911.

*Cross-Int.* 473. Did it take the place of some other adapted for accomplishing a like result?

*Ans.* It is supplied as an alternative machine for performing operations which are performed by other machines.

*Cross-Int.* 474. State what features of the machine in question are within the terms of the claims of the Heys patent referred to.

*Ans.* The claims of Heys patent No. 860,377, July 16, 1907, are directed to the general organization of the machine in question, indenting and burnishing machine, model X, Goodyear welt.

Mr. WEBSTER. In view of the fact that counsel for plaintiff has no access to the application referred to by the witness, the statement with reference to said application is objected to and plaintiff moves that it be stricken from the record.

Mr. PHILLIPS. Counsel for defendants calls attention to the fact that complainant's counsel has given no notice that he desired to inspect the pending application referred to or any notice to defendants' counsel to produce it.

Mr. WEBSTER. It is the understanding of counsel for plaintiff that counsel for defendants has refused to produce for inspection any pending applications. Hence the statement made on the record. If counsel for defendants has had a change of heart, he is hereby requested to kindly produce the application referred to in statement by the witness, in Defendants' Exhibit 342, for inspection.

Mr. PHILLIPS. Question objected to because complainant's counsel has given no notice that he desired the application to be produced.

Mr. WEBSTER. Counsel for the plaintiff now gives notice that

he desires to have produced for purposes of inspection and examination, to lay a foundation for interrogatories to be submitted to the witness, the particular application referred to, together with all other pending applications. It is the understanding of counsel for plaintiff that counsel for defendants well knew that these applications would in all probability be called for, and it was not understood that any formal notice was to be required. The same, however, is now given so that there may be no further misapprehension.

Mr. PHILLIPS. With regard to the specific application, inspection of which is requested, counsel for defendants would like to know when it is desired that such application be produced.

Mr. WEBSTER. At the earliest possible moment convenient for the witness and opposing counsel.

Mr. PHILLIPS. Counsel for defendants states that with regard to such application, if it is found to be competent under the order of the Court, it will be produced at the next session. If not, the reason for not producing it will be fully stated. With regard to the general request that all pending applications be produced, it is too vague and indefinite for counsel to take any position in the matter.

Mr. WEBSTER. In the employment of the term "all pending applications", counsel for plaintiff desires it to be understood that he made reference to pending applications testified to by the witness.

*Cross-Int. 475.* Lasting bench, model X, McLeod application, serial No. 524,952, October 27, 1909. Kindly state if you are willing to produce that application for examination, laying the foundation for submitting cross-interrogatories.

Mr. PHILLIPS. Counsel for defendants has already stated that no notice has been given to produce any pending applications, and for that reason the question is objected to.

*Cross-Int. 476.* Kindly state whether the lasting bench model X, referred to as made under said application, was adopted by the United Company when it went into use, and what allowed claims of pending applications, if any, covered the construction, and point out what the novel construction comprises.

Mr. PHILLIPS. Question objected to as not within the terms of the order under which this testimony is being taken, and for the

further reason that no notice had been given to produce any pending applications.

*Ans.* The machine was adopted February 8, 1911, and has been put out since that time. I have not at hand the file of the application or copies of the claims, and shall have to defer answering the balance of the question until I have an opportunity to refresh my recollection by examining the papers of the application.

*Cross-Int.* 477. Was the lasting bench model X a radically new contrivance, or was it simply an advancement in the art?

*Mr. PHILLIPS.* Question objected to for the reason that it is not within the scope of the order under which the testimony is being taken.

*Ans.* I should characterize the machine rather as an improvement upon constructions previously used than as a machine for performing an operation not before performed by machines.

*Cross-Int.* 478. I observe in your statement, Defendants' Exhibit 342, you refer to this device as a "Lasting Bench", while in your answers now made you refer to it as a machine. Will you kindly state for the information of the Court whether it is a machine or a bench?

*Ans.* Its name aptly describes it. I used the word "machine" for convenience, or through thoughtlessness.

*Cross-Int.* 479. Kindly examine the cut on page 45 of Defendants' Exhibit 267, and state whether it properly illustrates the lasting bench model X, made under the application referred to.

*Ans.* Yes, sir; it does.

*Cross-Int.* 480. Referring now to your memorandum Defendants' Exhibit 342, under the title "Lasting Machine No. 5, U. S. M. C.", I notice that you appear to say that the No. 5 laster had incorporated in it the mechanisms of patent to Glass No. 957,949, May 17, 1910, reissued No. 13,505, January 7, 1913, and patent to Plant, 958,280, May 17, 1910. Will you kindly state what particular claims of these several patents define the mechanism which I understand you to say was incorporated in the No. 5 laster by the United Company?

*Ans.* Of reissued patent No. 13,505, January 7, 1913 (original

patent No. 957,949, May 17, 1910), claims 13, 14, 15 and 16 define mechanisms embodied in lasting machine No. 5, U. S. M. Co., and of patent No. 958,280, May 17, 1910, Plant. Claims 46, 47, 49 and 50 define improvements embodied in lasting machine No. 5.

*Cross-Int.* 481. Can you now very briefly, for the information of the court, point out in a general way what those various mechanisms as referred to in the claims were, so as to avoid necessity of careful analysis of the claims?

*Ans.* The claims of the Glass patent, reissue No. 13,505, referred to in my preceding answer, are directed to the mechanisms for jacking and unjacking the shoe. The claims of Plant patent No. 958,280 named in my preceding answer are directed to the heel-band operating mechanism of lasting machine No. 5.

*Cross-Int.* 482. Kindly state when the machine was first put out by the United Company under the head of "No. 5 Laster"?

*Ans.* January, 1908.

*Cross-Int.* 483. Kindly state when the heel-band operating mechanism referred to by you as being found in claims 13, 14, 15 and 16 of the reissued patent to Glass No. 13,505, and claims 46, 47, 49 and 50 of the Plant patent No. 958,280 were first, so far as you are informed, incorporated in the No. 5 laster.

*Ans.* The mechanisms set forth in claims 13 to 16 of Glass reissue No. 13,505 were embodied in the machine when it was first put out in January, 1908, the heel-band operating mechanism defined in claims 46, 47, 49 and 50 of Plant patent 958,280 was first incorporated in the machine in March, 1909.

*Cross-Int.* 484. Was the No. 5 laster inoperative without having incorporated in it the constructions referred to in your last answer?

*Ans.* The machine would not be so convenient for the operator, nor would it do so good work without the mechanisms referred to.

*Cross-Int.* 485. I note you state in Defendants' Exhibit 342, under the head of "Laying Machine, Model X, Apex Welt", that the mechanism defined in the McLeod patent 957,987, May 17, 1910, were incorporated in that machine. Will you kindly state when they were so incorporated by the United Company?

*Ans.* Laying machine, model X, Apex welt, was a Plant machine which was adopted by the United Company in February, 1911. And the mechanisms set forth in nearly all of the thirteen claims of patent No. 957,987 have been embodied in that machine since that date.

*Cross-Int.* 486. And was the mechanism of the McLeod patent referred to a radical change and advancement in the art, or was it constructed similar to machines that had previously been used for a like purpose?

*Ans.* There had been machines previously used for performing the operation which laying machine, model X, Apex welt, is used, but this machine was a distinct improvement upon prior machines, and in its operation did work which was not done by the machines previously used. That is, this machine was organized for severing from the source of supply the welt which had been attached to the shoe. That operation was never before performed by a welt-laying machine.

*Cross-Int.* 487. Kindly examine the cuts on page 4 of Defendants' Exhibit 267, and state whether or not the one marked "Plant" illustrates the Plant machine made under the McLeod patent, and whether the one on the right marked "Apex Welt Laying Machine — Model A" illustrate the machine previously made by the United Company.

*Ans.* I answer both questions in this interrogatory in the affirmative.

*Cross-Int.* 488. Kindly state when the Apex welt-laying machine, model A, was first put out, and when the Plant machine made under the McLeod patent was first put out, so far as you are informed.

*Ans.* As I previously stated, the laying machine, model X, Apex welt, was adopted in February, 1911. Laying machine, model A, Apex welt, was put out by the United Company in February, 1910.

*Cross-Int.* 489. And had a machine designed to accomplish a similar purpose been previously put out by the United Company?

*Ans.* No, sir.

*Cross-Int.* 490. Had no machine been put out, so far as you know, adapted for laying the welt?

*Ans.* There had been used for many years a machine for tacking a mock welt to a McKay out-sole; but I do not now recall any machine used before February, 1910, for attaching a mock welt to a McKay out-sole by means of cement, which was the means by which the welt is attached by both laying machine, model A, Apex welt, and laying machine, model X, Apex welt.

*Cross-Int.* 491. Now, in order to make that matter clear for the court, will you explain when the laying operation took place? Was it after the McKay shoe was stitched or before?

*Ans.* It was before the stitching operation.

*Cross-Int.* 492. And the machine operated to cement the welt on the sole, did it?

*Ans.* Yes, sir.

*Cross-Int.* 493. I note in Defendants' Exhibit 267, on page 4, the cuts, following the cuts which you have identified, entitled "Fair-stitch Welt Attachment". Do you understand that that has reference to the same machines for laying a mock welt on the edge of a sole of a McKay stitched shoe?

*Ans.* Yes, sir; the explanation probably being that a McKay welt is almost always "fair-stitched", so that the completed shoe shall resemble in appearance a welt shoe.

*Cross-Int.* 494. Then am I right in assuming that the laying machine to which reference has been made has no connection whatever with the manufacture of a welt shoe?

*Ans.* Yes, sir.

*Cross-Int.* 495. And the apex welt-laying machine which was controlled or manufactured by the United Company prior to the Plant acquisition was adapted to accomplish the same result as the Plant, excepting that the Plant machine cut off the welt at the finishing of the cementing operation; is that right?

**Mr. PHILLIPS.** Objected to as not within the scope of the order under which this testimony is being taken. The order of the court under which this testimony is being taken reads as follows: —

"With the consent of the parties it is ordered that the United States shall have from February 24 to March 10, inclusive, for the further cross-examination of Nelson W. Howard and the introduction of evidence in rebuttal before the Special Examiner, Charles K. Darling, with reference to matters provided for in the order entered in this cause, on January 14, 1914, and also to introduce evidence before the Special Examiner in rebuttal to evidence submitted by defendants in open court with respect to patents and machines obtained by the defendants from Thomas G. Plant. . . ."

This whole line of cross-examination seems to be directed to the cross-examination of Mr. Howard as to evidence submitted in open court, in connection with Defendants' Exhibit 342, and does not appear that under the order of the court any such cross-examination is authorized. This whole line of examination is therefore objected to.

*Ans.* I should prefer not to state that the two machines accomplished the same results, as the model X machine was a superior machine throughout. So far as concerns the operations for which the machines were intended, the distinction made in the interrogatory is substantially correct. That is, the model X machine differed from the model A machine in that it cut off the welt at the conclusion of the operation upon each shoe, and that was not done by the model A machine.

*Cross-Int.* 496. You have referred in your testimony to laying machine, model X, Goodyear channel, made, as I understand your testimony, under patent to Hooper No. 861,179, July 23, 1907, entitled "Channel Flap Layer". Kindly state when, if at all, the machine constructed as set forth in said patent was first put out by the United Company.

Mr. PHILLIPS. Question objected to because it does not relate to any subject-matter referred to by this witness in his testimony before the Special Examiner, and for that reason it is outside the order of the Court under which this testimony is being taken.

*Ans.* Laying machine, model X, Goodyear channel, constructed as set forth in all of the seventeen claims, excepting claim 13, of patent No. 861,179 was first put out by the United Company on May 5, 1911.

*Cross-Int.* 497. What machine, if any, had the United Company previously put out for accomplishing the same purpose?

Mr. PHILLIPS. Objected to as outside the order of the Court under which this testimony is being taken.

*Ans.* A machine known as "laying machine, Goodyear channel".

*Cross-Int.* 498. Kindly examine the two cuts on page 80 of Plaintiff's Exhibit 267, and state whether the one on the left properly illustrates the Plant machine as put out by the United Company under said patent to Hooper, and whether the one on the right properly illustrates the machine previously put out by the United Company adapted for the same purpose.

Mr. PHILLIPS. Objected to as outside the order of the court and for the reasons already stated.

[*Witness here examines cuts and says:*] [ ]

*Ans.* The two cuts referred to on page 80 of Plaintiff's Exhibit 267 accurately illustrates the two machines referred to in the interrogatory.

*Cross-Int.* 499. Kindly state whether the laying machine, model X, Goodyear channel, is designed for any purpose other than to turn the channel flap back over the seam after the seam has been laid in the channel.

Mr. PHILLIPS. The same objection.

*Ans.* The machine was designed to perform that operation, and, so far as I know, for no other operation.

*Cross-Int.* 500. Is it for use on welt shoes only, or on McKays?

Mr. PHILLIPS. The same objection.

*Ans.* It was designed particularly for, and is used on, welt shoes.

*Cross-Int.* 501. You have testified with reference to leveling machine, model B, Hercules, and, as I understand your testimony, it is to the effect that such machine as put out by the United Company was within the terms of some of the claims of patent to Heys No. 684,239, October 8, 1901, and patent to Heys No. 707,414, August 19, 1902. Will you kindly point out which particular claims of those patents include the construction of the machine as

put out by the United Company, and what particular features, stated in your own language, are so covered?

Mr. PHILLIPS. Objected to as relating to nothing touched upon in the prior testimony of this witness before the examiner, and therefore not within the order of the Court authorizing the cross-examination of the witness.

Ans. Leveling machine, model B, Hercules, embodies the mechanism set forth in claims 4, 10 and 13 of patent No. 684,239, Heys, October 8, 1901, and claim 11 of patent No. 707,414, Heys, August 19, 1902.

Cross-Int. 502. Kindly state when the machine was first put out embodying the claims you have referred to in that Heys patent.

[*It is hereby stipulated that the objection heretofore entered on the record by counsel for defendants to this line of examination, because of its being outside the scope of the order, may be hereafter covered in the record by the words "Same objection", without having the objection spread at length upon the record.*]

Ans. In June, 1905.

Cross-Int. 503. That relates to both patents?

Ans. Yes, sir.

Cross-Int. 504. Can you, without inconvenience, state where one of the machines which had incorporated in it the construction set forth in the claims of the two patents referred to and put out in 1905 or 1906 may be found for examination?

Mr. PHILLIPS. Same objection.

Ans. I shall be glad to provide a machine at my office for your inspection.

Cross-Int. 505. Pardon me, but I desire to ascertain the whereabouts of such machine which was put out and put into actual use in 1905 or 1906, and if you can give the information it will very much oblige.

Mr. PHILLIPS. The same objection.

Ans. I cannot state at this time where one of these machines is in operation, but at the next session I shall be glad to submit a list of factories where those machines may be seen in operation.

Cross-Int. 506. Were you not knowing to the fact in 1905 when

the leveling machine, model B, Hercules, was put out by the United Company that it was an infringement upon the Heys patent referred to?

Mr. PHILLIPS. Same objection.

Ans. I was aware of that fact at that time, or soon after that time.

*Cross-Int.* 507. Did the United Company continue, after acquiring such knowledge, to put out such machine in infringement of those patents?

Mr. PHILLIPS. Same objection.

Ans. Yes, sir.

*Cross-Int.* 508. Are you not knowing to the fact that counsel advised the United Company that the machine so put out did not infringe the patents referred to?

Mr. PHILLIPS. The same objection, and further objected to because it relates to advice of counsel, which is privileged and cannot be inquired into.

Ans. I am not.

*Cross-Int.* 509. You have testified with reference to loading and attaching machine, model B, McKay automatic heel, and, as I understand your testimony, such machines as put out by the United Company fell within the terms of the claims of patent to Plant No. 958,281, dated May 17, 1910, and patent to Plant No. 958,282, dated May 17, 1910. Will you kindly state when the loading and attaching machine, model B, McKay automatic heel, was first put out by the United Company containing the constructions set forth in the claims of such patents, or either of them, and point out which particular claims define such construction?

Mr. PHILLIPS. Same objection.

Ans. The loaning and attaching machine, model B, McKay automatic heel, was first put out in November, 1910, after a year or more of experimental factory use. It embodied the improvements set forth in claim 8 of patent No. 958,281, May 17, 1910, Plant, and claims 10 and 11 of patent No. 958,282, May 17, 1910, Plant.

*Cross-Int.* 510. What machine had the United Company put out

to accomplish the same purpose prior to putting out loading and attaching machine, model B, McKay automatic heel?

Mr. PHILLIPS. Same objection.

*Ans.* For the attaching of the heels of welt shoes, which was the class of work for which loading and attaching machine, model B, was designed, the United Company had been putting out nailing machine, American Lightning.

*Cross-Int.* 511. Stated in other words, a loading and attaching machine, as I understand it, is a machine for attaching the heel to the sole of the shoe; am I right?

Mr. PHILLIPS. Same objection.

*Ans.* Yes, sir.

*Cross-Int.* 512. And for the information of the Court and counsel, will you kindly state what the designation "loading" means in connection with the rest of the title adopted by your company?

*Ans.* In loading and attaching machine, model B, McKay, automatic heel, the heel-attaching nails are automatically taken from a mass of nails in a hopper and the proper number of nails for the heel to be attached are arranged with their points all in the same direction; are automatically delivered to a nail transferer, and are deposited by that transferer in the nail block from which they are driven to attach the heel. The word "loading" in the name of the machine has reference to this automatic supplying of the proper number of nails for each operation of the machine.

*Cross-Int.* 513. There is some evidence on the record in your deposition relating to molding machine, stitch-down upper; kindly state briefly for what character of shoe such a machine is adapted for operation.

Mr. PHILLIPS. The same objection.

*Ans.* That machine is adapted particularly for the making of stitch-down shoes.

*Cross-Int.* 514. In other words, will you kindly explain to the Court what kind of a shoe a shoe is which has a stitch-down upper; that is, whether it is a welt shoe, a McKay shoe, or what kind of a shoe?

Mr. PHILLIPS. The same objection.

*Ans.* In making a stitch-down shoe, during the lasting operation the edge of the upper, instead of being laid over the bottom of the insole or over the feather edge of the insole as in a McKay sewed or welt shoe respectively, is out-turned away from the corner of the last formed by its side and its bottom, and the out-sole is secured to the shoe by stitching passing through the out-turned flange of the upper and the out-sole.

*Cross-Int.* 515. Do you know whether there is any considerable amount of stitch-down upper shoes made and sold?

Mr. PHILLIPS. Same objection.

*Ans.* Yes, sir; a large number of stitch-down shoes are being manufactured all the time.

*Cross-Int.* 516. Are they heavy or light shoes?

Mr. PHILLIPS. Same objection.

*Ans.* Probably the greater proportion of them are children's shoes, but a considerable number of sandals for both men and women are made in this way, and the proportion of men's and women's shoes made by this method is rapidly increasing.

*Cross-Int.* 517. I observe that the patents referred to in your list Defendants' Exhibit 342, under the head of "Molding Machine, Stitch-down Upper", are entitled, No. 871,963, November 26, 1907, Stewart, "Machine for making Pad Covers", and that the other patent referred to, namely, No. 871,966, November, 26, 1906, Stewart, is entitled "Method for making Pad Covers". Do the titles quoted from the patents correctly designate the subject-matter of the patents referred to?

Mr. PHILLIPS. Same objection.

*Ans.* Yes, sir; in that patent No. 871,963 shows and describes a machine primarily intended for making pad covers, and patent No. 871,966 sets forth a method which is described in that patent as practiced in the making of pad covers.

*Cross-Int.* 518. Did the United Company ever carry out the method of making pad covers defined in patent No. 871,966?

Mr. PHILLIPS. Same objection.

*Ans.* Its machine known as "Molding Machine, Stitch-down

"Upper" practices in its operations the method set forth in claims 1, 2 and 4 of that patent No. 871,966.

*Cross-Int.* 519. Did the United Company ever carry out the method?

Mr. PHILLIPS. Same objection.

*Ans.* Yes, sir; to the extent that it builds and supplies to manufacturers machines which can be operated only by practicing the method set forth in the claims named in my last answer.

*Cross-Int.* 520. Kindly state when the United Company first put out its machines like that set forth in the patent for machine for making pad covers.

Mr. PHILLIPS. Same objection.

*Ans.* In November, 1907, the United Company first put out a machine embodying mechanism set forth in claims 4, 7, 28 and 37 of patent No. 871,963.

*Cross-Int.* 521. And had the United Company, prior to November, 1907, put out any machine adapted for accomplishing a like result?

Mr. PHILLIPS. Same objection.

*Ans.* For a few months before that date the United Company had put out separate machines for molding the toe and the heel of a stitch-down shoe. Molding machine, stitch-down upper, was, in effect, a combination of the two earlier machines and comprises in one machine mechanism for molding both the toe and the heel of a stitch-down shoe.

*Cross-Int.* 522. And did the United Company continue from November, 1907, to put out molding machine, stitch-down upper, in infringement of the Stewart patents referred to until the purchase of patents from Plant?

Mr. PHILLIPS. Same objection.

*Ans.* Yes, sir.

*Cross-Int.* 523. In your testimony you make reference to the Plant patents No. 958,302, May 17, 1910, and No. 958,282, May 17, 1910, the constructions set out in some of the claims of which patents were incorporated, as I understand you, in the United Com-

pany's nailing machine, American Lightning. Will you kindly state when such construction was first embodied in such machine?

Mr. PHILLIPS. Same objection.

*Ans.* Mechanism embodying improvements defined in the claims of patent No. 958,302, May 17, 1910, Plant, was first used on the nailing machine, American Lightning, in January, 1910, but as it was found to infringe that patent it was discontinued until after the Plant acquisition. On September 29, 1910, after the Plant acquisition, under instructions from the patent department, the mechanism was adopted and a large number of machines have since been put out embodying this mechanism. Mechanism embodying the subject-matter of claims of patent No. 958,282, May 17, 1910, Plant, is incorporated in the reorganized automatic machine which was adopted in July, 1913, after many months of experimental use.

*Cross-Int.* 524. In order to shorten the record as much as possible, I will ask you to kindly examine the heel having nails driven therein, which heel was kindly delivered to me yesterday by yourself or Mr. Warren, and state whether it properly illustrates the kind of work the machine in question, having the mechanism of the Plant patent referred to incorporated therein, is adapted to perform.

Mr. PHILLIPS. The same objection.

*Ans.* The heel which you have submitted for my inspection is a "loaded heel" which was loaded on the machine illustrated in patent No. 958,302, May 17, 1910, Plant. The nailing machine, American Lightning, does not use a loaded heel. This heel, however, does illustrate roughly the driving of heel-attaching nails at an inclination, which is done by the Lightning machine.

*Cross-Int.* 525. The alleged Plant improvement, as I understand it, related to the mechanism by which the nails were fed at an angle to the tread surface of the heel; am I right?

Mr. PHILLIPS. Same objection.

*Ans.* The improvements defined in the claims of Plant patent No. 958,302, the mechanisms of which are incorporated in the nailing machine, American Lightning, have to do with the driving of heel-attaching nails in directions inclined rearwardly.

*Cross-Int.* 526. Is it not a fact that nails were previously driven, inclined rearwardly through the heel, prior to the disclosure of the mechanisms set forth in said Plant patents?

Mr. PHILLIPS. Same objection.

*Ans.* Yes, sir; the mechanism which we have been discussing constituted an improvement upon nailing machine, American Lightning, as it had previously been organized for driving nails inclined rearwardly.

*Cross-Int.* 527. You have testified with reference to opening machine, model X, Goodyear channel. If the construction of that machine is illustrated in Plaintiff's Exhibit 267, will you kindly point out upon what page such illustration appears?

Mr. PHILLIPS. Same objection.

*Ans.* That machine is illustrated on page 73 of Plaintiff's Exhibit 267, in the cut at the left.

*Cross-Int.* 528. Kindly state when the opening machine referred to by you, constructed as set forth in the patent to Hooper No. 947,509, January 25, 1910, was first put out by the United Company.

Mr. PHILLIPS. Same objection.

*Ans.* In May, 1911.

*Cross-Int.* 529. I observe that the patent referred to by you under the heading of opening machine is entitled "Channel Lip Turning Machine". Do I understand the two terms mean the same?

Mr. PHILLIPS. Same objection.

*Ans.* Yes, sir.

*Cross-Int.* 530. Had any machine been put out by the United Company, previous to the Plant acquisition, designed and adapted to accomplish the same purpose?

Mr. PHILLIPS. The same objection.

*Ans.* Yes, sir.

[*Adjourned to 10 A. M., February 26, 1914.*]

BOSTON, MASS., February 26, 1914.

Mr. WEBSTER. The witness having kindly produced the copy of patent to Bertrand of March 7, 1882, containing an illustration of what is known as a stitch-down shoe, counsel for the plaintiff offers in evidence a drawing marked "Fig. 3" of the patent in question.

Mr. PHILLIPS. The introduction of the exhibit is objected to as outside the order of the Court under which this testimony is being taken.

[*Drawing marked "Fig. 3" of Bertrand patent No. 254,594 is marked "Plaintiff's Exhibit 280".*]

Cross-Int. 531. Will you kindly examine the shoe I now hand you, and state whether it is a welt shoe for men?

Ans. The shoe submitted for my inspection appears to be a man's welt shoe.

[*Man's welt shoe examined by the witness is offered in evidence, and marked "Plaintiff's Exhibit 281".*]

Cross-Int. 532. Will you kindly examine the shoe I now hand you, and state whether it is a welt shoe for women?

Ans. The last shoe submitted for my inspection appears to be a woman's welt shoe, unusually heavy and of large size.

[*Woman's welt shoe examined by the witness is offered in evidence, and marked "Plaintiff's Exhibit 282".*]

Cross-Int. 533. Will you kindly examine the cuts on page 108 of Plaintiff's Exhibit 267, and state whether either of the cuts properly illustrate the knife grinding about which you testified yesterday?

Mr. PHILLIPS. Question objected to as outside the order of the court under which this testimony is being taken, there being no authority in said order to cross-examine this witness on any subject-matter not referred to in his testimony previously given in behalf of the defendants before this examiner. It is agreed that an objection noted as "The same objection" shall be equivalent to a repetition of this objection.

Ans. No, sir. Neither of the cuts on page 108 of Plaintiff's Exhibit 267 illustrates the grinding machine, model H, Imperial, about which I testified yesterday.

*Cross-Int.* 534. Will you kindly give the trade designation, as employed by the United Company, of the cut at the right of page 108 if the same is a machine put out by the United Company?

Mr. PHILLIPS. Same objection.

*Ans.* The United Company did not adopt the Plant machine shown in the cut at the right of page 108 of this exhibit, and has not put that machine out.

*Cross-Int.* 535. Do either of the machines illustrated in the cuts on page 108 of Plaintiff's Exhibit 267 show a construction such as is defined in the claims of the patent purchased of Plant, to which you made reference yesterday, Heys No. 944,238, December 21, 1909?

Mr. PHILLIPS. Same objection.

*Ans.* No; the machine of Heys patent No. 944,238 is intended and adapted for entirely different uses from those for which the machines on page 108 of the Exhibit 267 are adapted.

*Cross-Int.* 536. If the grinding machine of the Heys patent is illustrated in Plaintiff's Exhibit 267, will you kindly state upon what page it is found?

Mr. PHILLIPS. Same objection.

*Ans.* I believe that the machine of Heys patent No. 944,238 is not illustrated in Plaintiff's Exhibit 267.

*Cross-Int.* 537. You testified with reference to polishing machine, model X, Climax, and as I understand it your testimony is to the effect that such machine was constructed by the United Company in accordance with some of the claims of the patent to Plant No. 958,288, dated May 17, 1910, and patent to Plant No. 965,-223, dated July 26, 1910. Will you kindly state when a machine was first put out by the United Company constructed as set forth in said claims?

Mr. PHILLIPS. Same objection.

*Ans.* That machine, polishing machine, model X, Climax, was adopted in February, 1911.

*Cross-Int.* 538. And had the United Company previously put out a machine adapted for accomplishing the same purpose?

Mr. PHILLIPS. Same objection.

*Ans.* Yes, sir.

*Cross-Int.* 539. I note that patent No. 965,223 is entitled "Dust Gatherer for Abrading Machine"; will you state briefly whether that patent relates to anything more than is indicated in the title of the patent, to-wit, a dust gatherer?

Mr. PHILLIPS. Same objection.

*Ans.* Perhaps I ought to explain that the "dust" in this title means the material which is removed from the stock in the operation of the machine. In the operation of such a machine the air about the machine is constantly filled with this fine material removed in the operation of the machine, unless means is provided for removing it. With this explanation I should state that the title properly designates the improvement as set forth in this patent.

*Cross-Int.* 540. I note that the other patent, to-wit, patent No. 958,288, dated May 17, 1910, is entitled "Boot and Shoe Buffing Machine"; am I to understand that the terms "polishing machine" and "buffing machine" are used as synonymous terms in this connection?

Mr. PHILLIPS. Same objection.

*Ans.* I do not understand the question.

*Cross-Int.* 541. I note that in the title employed by you in the paper marked "Defendants' Exhibit 342" you make reference to "Polishing Machine, Model X, Climax", to refer to the patents noted in the previous question and answers. I note also that in one of these patents the title is stated as "Boot and Shoe Buffing Machine". My question is whether the term "polishing machine" as employed by you in Defendants' Exhibit 342 is a synonymous term with "buffing machine" as employed in the patent?

Mr. PHILLIPS. Same objection.

*Ans.* No, sir.

*Cross-Int.* 542. Then am I to understand that the buffing machine of the Plant patent No. 958,288 is not a polishing machine?

Mr. PHILLIPS. Same objection.

*Ans.* Not as the terms "buffing machine" and "polishing machine" are technically used in the industry. It should of course be understood that improvements which are useful in a buffing ma-

chine may also be useful in a polishing machine, and that is the situation in this case.

*Cross-Int.* 543. Did it involve any change in the construction of the machine to employ the mechanism of the buffing machine of the Plant patent referred to, to turn it into a polishing machine such as is referred to in the exhibit?

Mr. PHILLIPS. Same objection.

*Ans.* Yes, sir; it involved some mechanical changes, such as altering dimensions of parts.

*Cross-Int.* 544. Will you kindly examine Figure 2 of patent to Plant, entitled "Boot and Shoe Buffing Machine", No. 958,288, and state whether it properly illustrates the invention sought to be protected by the claims of that patent?

Mr. PHILLIPS. Same objection.

*Ans.* Yes, sir; it does.

*Cross-Int.* 545. Do you know whether the record contains an illustration of the polishing machine, model X, Climax, as put out by the United Company?

Mr. PHILLIPS. Same objection.

*Ans.* Yes, sir; that machine is illustrated in the cut at the left on page 134 of Plaintiff's Exhibit 267.

*Cross-Int.* 546. You have testified with reference to pulling-over machine, model B, Rex, and I understand your testimony is to the effect that such machine as put out by the United Company was constructed as set forth in some of the claims of patent to Heys No. 957,955, dated May 17, 1910, and while you have heretofore stated on the record what claims were embodied in such machine, I will ask you to kindly state the same now and also state when that machine was first put out by the United Company constructed as set forth in such claims.

Mr. PHILLIPS. Same objection.

*Ans.* Pulling-over machine, model B, Rex, was adopted in July, 1910. The improvement defined in claim 55 of patent No. 957,955, May 17, 1910, Heys, was adopted on September 30, 1910, after the acquisition of the Plant patents.

*Cross-Int.* 547. You have testified with reference to rounding

machine, Goodyear heel seat, and as I understand your testimony such machine was put out by the United Company constructed as set forth in patent to Heys No. 1,005,545, October 10, 1911, and patent to Phelan No. 1,005,573, October 10, 1911. Will you kindly state when such machine was first put out by the United Company containing structures defined in the claims of such patents, and what claims define such structures?

Mr. PHILLIPS. Same objection.

*Aus.* This machine, rounding machine, Goodyear heel seat, in its first form was put out by the United Company in September, 1906. In view of British patent No. 12,613, May 31, 1907 (priority claimed June 1, 1906), granted to M. D. Phelan, whom we knew to be one of Plant's inventors, we discontinued the first type of the machine, as we assumed that a United States application corresponding to that British patent was pending. Such an application was pending and on it was granted patent No. 1,005,573, October 10, 1911. If the first form of our machine had been continued, it would have infringed that patent. In the endeavor to avoid this infringement the machine was reorganized and was again adopted commercially in August, 1909. The new construction avoided infringement of the Phelan patent, but further difficulty was encountered when, on February 1, 1910, an interference, No. 31,422, was declared between an application on this second form of machine owned by the United Company and an application, serial No. 309,997, filed April 5, 1906, Heys, on which was granted patent No. 1,005,545, October 10, 1911. When this interference was declared we learned for the first time that Plant's inventor, Heys, was prior to Phelan. The issues of that interference were claims 8, 15, 17, 18 and 21 of patent No. 1,005,545, October 10, 1911, Heys. If we had continued to put out this second form of the machine, it would have infringed those claims and also claims 1, 2 and 6 of that patent. Accordingly we discontinued the machine and did not put it out again until after the acquisition of the Plant patent. It was then again adopted and put into extensive commercial use.

*Cross-Int.* 548. The machine of these patents comprises as one

of its principal novel features a curved flexible knife which moves to cut the surplus stock from the out-sole at the heel portion of the shoe, does it not?

Mr. PHILLIPS. Same objection.

*Ans.* The machine comprises such a knife, but that is not one of the principal novel features defined in the claims of the Heys and Phelan patents.

*Cross-Int.* 549. Referring again for a moment to pulling-over machine, model B, Rex, I note that claim 55 to which you have made reference cites, among other things, "a gaging device movable into and out of operative position". Kindly state whether this gaging device is illustrated in Fig. 1 of the patent and point out the marking as indicating such device.

Mr. PHILLIPS. Same objection.

*Ans.* Yes, sir: the gaging device, which is an element of claim 55 of patent 957,955, is illustrated in Fig. 1 of that patent. The part of the device which engages the shoe is marked "110".

*Cross-Int.* 550. And this device comprises a pin or rod marked "109", bent downwardly as indicated by 110 and mounted to be moved as desired upon a support, does it not?

Mr. PHILLIPS. Same objection.

*Ans.* As I have stated, the part of the device which engages the shoe is marked "110" in Fig. 1 of patent No. 957,955. If it be attempted to identify the other elements of claim 55, it will be necessary to name many more parts than are mentioned in the interrogatory.

*Cross-Int.* 551. Very well. The part 110 is integral of the part 109, is it not?

Mr. PHILLIPS. Same objection.

*Ans.* No, sir; it is not.

*Cross-Int.* 552. Is it a separate member mounted upon the end of the part marked "109"?

Mr. PHILLIPS. Same objection.

*Ans.* Yes, sir.

*Cross-Int.* 553. But the part marked "109" is the rod upon which part 110 is mounted, is it not? -

Mr. PHILLIPS. Same objection.

*Ans.* Yes, sir.

*Cross-Int.* 554. You have testified with reference to rounding and channeling machine, model E, Goodyear Universal, and as I understand your testimony such machine as put out by the United company at one time was constructed as set forth in some of the claims of patent to English No. 878,478, February 4, 1908. Will you kindly state when such machine was first put out constructed as set forth in the claims heretofore referred to, to-wit, 51, 52, 53 and 54 of said patent?

Mr. PHILLIPS. Same objection.

*Ans.* The machine inquired about, rounding and channeling machine, Goodyear Universal, model E, was first put out by the United Company in December, 1910. The machine as then constructed embodied the improvements set forth in claims 51, 52, 53 and 54 of patent No. 878,478, February 4, 1908, English. Every machine which has been put out has embodied improvements set forth in those claims 51 to 54. The machine as originally designed before it was put out for commercial use also embodied the improvements set forth in claims 18, 20 and 21 of this patent No. 878,478, February 4, 1908, English, but with great difficulty and at much expense the machine was changed to avoid this infringement before it was put into commercial use.

*Cross-Int.* 555. What was the trade-name or designation of the rounding and channeling machine put out by the United Company previous to such machine which embodied the construction referred to in the four claims 51, 52, 53 and 54?

Mr. PHILLIPS. Same objection.

*Ans.* Rounding and channeling machine, Goodyear Universal.

*Cross-Int.* 556. Is it not a fact that in claims 51 to 54, inclusive, a variable speed mechanism is one of the essential elements?

Mr. PHILLIPS. Same objection.

*Ans.* Claim 51 includes as an element "a variable speed-driving mechanism for the pattern", and an element defined in more or less similar terms is in each of claims 52, 53 and 54.

*Cross-Int.* 557. In other words, this variable speed mechanism

is a contrivance in which, by the moving of a lever, a high or low speed of the pattern may be attained; is that right?

Mr. PHILLIPS. Same objection, and further objected to as ambiguous and uncertain.

Ans. I prefer to explain the mechanism as I have heretofore explained it in my testimony in regard to this machine. The improvement comprised mechanism never before used in such a machine for controlling the operation of the pattern cam in such manner that the position of the forepart guide which determines the distance of the rounding cut from the edge of the last would be right at any given point in the operation of the machine whatever the size of the shoe.

*Cross-Int.* 558. That result is attained by changing the speed of the pattern, is it not?

Mr. PHILLIPS. Same objection.

Ans. Roughly speaking, that is correct.

*Cross-Int.* 559. You have testified with reference to scouring machine, model X, heel, and as I understand you the same was constructed as shown in patent to Bohr No. 883,445, March 31, 1908, and as shown in patent to McLeod No. 957,993, May 17, 1910. Will you kindly state when such machine was first put out by the United Company constructed as shown in said patents and referred to in the claims thereof?

Mr. PHILLIPS. Same objection.

Ans. Scouring machine, Model X, heel, was first put out by the United Company in November, 1911. Its commercial form is shown in the cut at the left, marked "Plant", on page 109 of Plaintiff's Exhibit 267.

*Cross-Int.* 560. Kindly state what machine was put out by the United Company prior to November, 1911, designed and adapted to accomplish the same purpose as the Plant device.

Mr. PHILLIPS. Same objection.

Ans. The heel-scouring machine which was put out by the United Company in November, 1911, is illustrated in the cut at the right, entitled "Heel Scouring Machine", on page 109 of Plaintiff's Exhibit 267.

*Cross-Int.* 561. You have testified with reference to splitting machine, Rapid noiseless wonder, which I understand you to say was constructed as shown in patent to Heys No. 844,128; kindly state when such machine was put out so constructed by the United Company.

Mr. PHILLIPS. Same objection.

*Ans.* This machine was first put out in September, 1910.

*Cross-Int.* 562. What was the trade designation of the machine before that time put out by the United Company designed for accomplishing a like result?

Mr. PHILLIPS. Same objection.

*Ans.* The United Company was putting out a machine known as the "Summit Splitting Machine".

*Cross-Int.* 563. State if you know whether there is in the record an illustration of the splitting machine, Rapid noiseless wonder.

Mr. PHILLIPS. Same objection.

*Ans.* I don't recall that there is.

*Cross-Int.* 564. Would it be convenient to produce one?

*Ans.* Yes, sir; I think I can produce one.

*Cross-Int.* 565. Will you kindly do so and very much oblige?

*Ans.* I shall be glad to.

*Cross-Int.* 566. You have testified with reference to treeing machine, model H, Miller twin, constructed, as I understand your testimony, in accordance with the patent to Hooper No. 944,365, December 28, 1909. Will you kindly state when such machine was first put out by the United Company and what claims of said patent show such construction, and the trade designation of the machine before the time designed to accomplish a like result, put out by the United Company?

Mr. PHILLIPS. Same objection.

*Ans.* Treeing machine, model H, Miller twin, had been put out for some years prior to the Plant acquisition by the O. A. Miller Treeing Machine Company, a constituent company of the United Shoe Machinery Company. In 1911 this machine was improved

by incorporating in it improvements set forth in the claims of patent No. 944,365, December 28, 1909, Hooper.

*Cross-Int.* 567. To state it in a homely way, a treeing machine is an apparatus to be inserted in a shoe and stretch the upper to the desired shape, is it not?

*Ans.* No, sir.

*Cross-Int.* 568. What is it designed for?

*Ans.* A treeing machine is intended and adapted for supporting and presenting properly a shoe for the operation of cleaning and finishing the upper at practically the end of the many making operations on the shoe.

*Cross-Int.* 569. I observe that the patent to Hooper referred to, No. 944,365, is entitled "Boot and Shoe Tree and Stretcher". Is that designation a correct designation for that patent in question?

*Mr. PHILLIPS.* Same objection.

*Ans.* Yes; this patent discloses and sets forth in its claims improvements on the portion of the treeing machine indicated in its title.

*Cross-Int.* 570. You have testified with reference to wetting machine, model X, Crest sole, and as I understand you the same was constructed by the United Company at one time as shown in patent to McLeod No. 957,992. Will you kindly examine that patent, and state whether Fig. 1 of the drawing properly illustrates the construction of such device or machine as put out by the United Company?

*Mr. PHILLIPS.* Same objection.

*Ans.* Fig. 1 of the drawings of the McLeod patent No. 957,992, which is a sectional view, shows with substantial accuracy the construction of the United Company's commercial wetting machine, model X, Crest sole, except that in the commercial machine a change has been made in the support indicated at "8" in that drawing, so that that support is now adjustable.

*Cross-Int.* 571. Kindly state when the United Company first put out a machine constructed as shown in said McLeod patent, and the trade designation as employed by the United Company of the machine or apparatus used before that time for the same purpose.

Mr. PHILLIPS. Same objection.

*Ans.* Wetting machine, model X, Crest sole, was adopted in February, 1911. The name of the machine previously put out by the United Company was wetting machine, Crest sole.

*Cross-Int.* 572. You have testified with reference to wetting machine, model X, Economy insole, constructed by the United Company, as I understand you, in accordance with patent to Hooper No. 957,961, May 17, 1910. Will you kindly state when the United Company first put out a machine constructed as shown in said patent, and the trade designation of machine prior to that time put out by the United Company for accomplishing the same result?

Mr. PHILLIPS. Same objection.

*Ans.* Wetting machine, model X, Economy insole, was adopted by the United Company in February, 1911. The machine previously put out is shown at the right on page 31 of Plaintiff's Exhibit 267, and I believe the official designation of that machine was "Wetting Machine, Economy Insole".

*Cross-Int.* 573. And does the cut at the left on page 31 of Plaintiff's Exhibit 267 properly illustrate the construction of the machine as put out by the United Company after February, 1911?

*Ans.* Yes, sir.

Mr. PHILLIPS. Counsel for defendants desires to repeat his objection to this whole line of cross-examination relating to Defendants' Exhibit 342, or to any evidence taken in open court in regard to the same, on the ground that such cross-examination is outside the order of the court under which this testimony is being taken, because such order does not authorize cross-examination of this witness except as to certain matters testified to by him in his testimony heretofore given in behalf of the defendants before this examiner.

Mr. WEBSTER. Counsel for the plaintiff respectfully calls attention to the fact that while in his opinion cross-examination with reference to matters referred to in the Defendants' Exhibit 342 is entirely within the scope of the order, the fact remains, nevertheless, that while that exhibit has been referred to for convenience, the record of the proceedings before the Special Examiner clearly

shows that the witness testified in direct examination with reference to the same devices, machines and patents, and therefore, even within the field conceded by counsel for the defendants, the cross-examination is entirely proper.

[*By subsequent agreement of counsel, hearing to be resumed at 10 a. m., February 27, 1914.*]

BOSTON, MASS., February 27, 1914.

**Mr. WEBSTER.** Counsel for the plaintiff inquires of counsel for the defendants whether he is prepared to produce copies of the pending applications for United States patents called for yesterday.

**Mr. PHILLIPS.** Counsel for defendants states that the cross-examination of Mr. Howard, during which pending applications were called for, was entirely outside of the order of the Court, but that without waving that objection, or without admitting the right of the complainant to call for the production of any applications pending in the United States Patent Office, and saving all defendants' rights in the premises, he is ready to produce the applications identified by counsel for complainant and requested to be produced, and he herewith produces such applications and submits them to counsel for the plaintiff.

The WITNESS. At the session on February 25, 1914, I was requested to produce copies of applications Serial No. 631,395, June 5, 1911, Heys and McClure, and serial No. 524,952, October 27, 1909, McLeod. I now produce for the inspection of counsel for the United States copies of the specifications, claims and drawings, as filed, of each of these applications.

*Cross-Int.* 574. Will you also produce copies of amendments and Office actions?

**Mr. PHILLIPS.** Counsel for defendants objects to the foregoing interrogatory and request as outside the order of the Court under which this testimony is being taken, for the reason hereinbefore fully stated and for the further reason that no reference has been made by this witness in any of his testimony to the Office actions upon any pending application; that such actions have no materiality in this cause; that the inventions sought to be patented in the

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applications produced are clearly disclosed in the drawings and described in the specifications, and the discussions between the examiner and solicitor prosecuting such applications and any question arising during that prosecution can be of no materiality. The original applications are, of course, all on file in the United States Patent Office and cannot be produced.

*Cross-Int. 575.* Is there any paper among the papers produced by you, alleging to be copies of pending applications, indicating officially when either or any of said applications were filed, whether they have been acted upon, and what claims, if any, stand allowed?

Mr. PHILLIPS. Objected to for the reasons hereinbefore fully stated.

*Ans.* As to the first question in the interrogatory, in order that the request of counsel for the United States might be met promptly it was impracticable to obtain certified copies of these applications from the United States Patent Office. Accordingly the copies were made from the file copies of the solicitors in the respective applications.

As to the second and third questions in the interrogatory, the copies submitted are, as I have previously stated, copies of the respective specifications, claims and drawings as originally filed which contain full disclosures of the improvements sought to be patented, but which do not show such subsequent proceedings as have been had in the Patent Office.

Mr. PHILLIPS. With regard to proceedings in the Patent Office, the defendants' counsel desires to add that, in accordance with the well known procedure in the Office, the statements of any examiner in charge of an application for a patent are made as then advised on the art and are no indication of the patentability of any claim referred to, and in practice are frequently altered and reversed; that an application for a patent, even after notice of so-called final allowance, is frequently withdrawn from issue and refused to the applicant on account of interference or for other reasons. For that reason the discussions of the attorney and the examiner can be of no materiality in any issue in this cause.

Mr. WEBSTER. Are we then to understand from the statement

of counsel for defendants that none of the claims of the pending applications to which the witness has testified are in fact allowed?

Mr. PHILLIPS. I am not aware that any claim of a patent is declared to include a patentable subject-matter until the grant of the patent. As my Brother Webster well knows, the refusal of the examiner to admit the patentability of a claim is often reversed by the Board of Examiners-in-Chief, and the Board of Examiners-in-Chief reversed by the Commissioner, and the Commissioner reversed by the Court of Appeals.

Mr. WEBSTER. It is the understanding of counsel for complainant that the statement made by learned counsel for the defendants is correct, and that none of the claims of a pending application may properly be said to be allowed until such time as the application as a whole is allowed and parties finally notified of that fact. The call for the copies of the applications which the witness has testified to was made because of the fact that the witness has frequently referred to "allowed claims" of pending applications, and now in view of the statement of counsel for defendants that no such claims were in fact allowed, counsel for complainant will not ask to examine the applications, but will insist upon the motion to strike out and erase from the record all testimony heretofore entered tending to show that claims of such pending applications were in fact allowed.

Counsel for complainant desires further to state that he did not call upon defendants to produce certified copies of any such applications, but did expect such copies to be presented as in fact formed a part of the application, thus including amendments and letters from the Patent Office; and counsel desires to say that he will be perfectly content with any paper which the witness states is a copy of any paper forwarded to the Patent Office. In view, however, of the statements heretofore made, it now becomes entirely unnecessary to go further with reference to pending applications.

Mr. PHILLIPS. Counsel for defendants calls the attention of the Court to the fact that the copies of the applications submitted to counsel for the plaintiff contain a complete disclosure of the invention for which it was expected to obtain United States Letters Pat-

ent, and that from such disclosure the learned counsel for the Government and his experienced expert can determine what that invention is with as great ease and facility as they could if the invention had actually gone to patent and the patent were presented to them. The statements of plaintiff's counsel as to Office actions and their utility in determining the novelty or patentability of an invention are frivolous.

Mr. WEBSTER. We are well aware that it is common practice among enthusiastic applicants for patents to claim everything possible relating to the art forming the subject-matter of such application, and if we were to rely upon such applications it would be apparent that the defendants might justify under applications covering every conceivable form of mechanism.

Mr. PHILLIPS. The only question of any materiality in this matter being as to whether or not these applications contained patentable subject-matter, that fact can be fully determined on the complete disclosure contained in the copies submitted to counsel for the plaintiff.

*Cross-Int.* 576. In the printed record on page 2286 you testify with reference to three patents issued after the filing of the bill herein, the same relating to fudge-stitch mechanisms, incorporated in out-sole rapid lockstitch machine. Kindly state whether the mechanisms defined in the claims of such patents are incorporated in the out-sole rapid lockstitch machine of the United Company, and when first so incorporated, and which claims define the mechanisms so incorporated.

*Ans.* Discussing first the second patent of the group of three to which the interrogatory relates, fudge-stitch mechanisms constructed substantially as shown in patent No. 1,017,397, February 13, 1912, Fletcher and MacLean (application filed March 31, 1905), were first embodied in the rapid out-sole lockstitch machine early in 1905 and this form has been furnished on that machine when desired ever since. That mechanism embodies the improvements set forth in claims 1 to 7 inclusive, 9, 13, 14 and 15 of that patent No. 1,017,397.

Early in 1906 there was adopted the form of fudge-stitch mechan-

ism shown specifically in patent No. 1,017,380, February 13, 1912, Cady and Thayer (application filed October 11, 1907). That form of the mechanism has been the most generally used and has been supplied on the machine ever since its introduction, which, as I have already stated, was early in 1906. That form, known as type A, embodies the improvements set forth in all five of the claims of patent No. 1,017,380.

Another form of fudge-stitch mechanism which has been preferred by some manufacturers is constructed substantially, but not exactly, as shown in the third patent of the group inquired about, namely, No. 1,027,791, May 28, 1912, Allen (original application filed February 8, 1906). This form is known as type B and embodies mechanisms set forth in all of the five claims of this patent No. 1,027,791. The improvements set forth in broad terms of this patent No. 1,027,791 are embodied in all forms of fudge-stitch mechanisms which have been incorporated in the different models of the out-sole lockstitch machine since the fudge-stitch mechanism was first embodied in that machine early in 1905.

*Cross-Int.* 577. Then, as I understand you, the improvements of said several patents issued after the filing of the bill herein were incorporated in the model M out-sole rapid lockstitch machine; is that correct?

*Ans.* The form of fudge-stitch mechanism which has always been embodied in the model M rapid out-sole lockstitch machine since it was first put out embodies mechanisms set forth in patent No. 1,017,397, February 13, 1912, Fletcher and MacLean (application filed March 31, 1905), and patent No. 1,027,791, May 28, 1912, Allen (original application filed February 8, 1906). That mechanism on the model M machine also embodies improvements defined in the claims of a number of other patents, but it does not embody the improvements defined in patent No. 1,017,380, February 13, 1912, Cady and Thayer.

While discussing the model M sticher, I should like to correct my statement in the sixth line on page 2301 of the printed record. I stated there that this machine "was first put out for commercial use as recently as January, 1912". Since making that statement

I have learned that on January 6, 1912, the first leases were executed for eight of these machines, but that two machines had previously been put into commercial use in shoe factories. The first of these was put out in June, 1911, and was continuously used in shoe factories until June 24, 1912. The second machine put out for commercial use was first used in a shoe factory on August 14, 1911, and has been in continuous use in shoe factories from that date to the present time.

Mr. WEBSTER. All the last portion of the answer is objected to as non-responsive. Counsel is, however, quite content that it remain as part of the record by way of correction, as I understand it was intended.

*Cross-Int.* 578. The subject-matter of these patents, stated in a homely way, is, as I understand it, a provision by which a channel may be cut in the welt in advance of the stitching operation; am I correct?

*Ans.* Roughly speaking, that is correct, it of course being understood that the channel or groove is automatically formed by the out-sole stitcher itself immediately preceding the formation of the stitch which is to be received in the groove so cut.

*Cross-Int.* 579. And is it not a fact to your knowledge that the same operation had been performed prior to the applications for said patents?

Mr. PHILLIPS. Objected to as outside the scope of the order.

*Ans.* Yes, sir; I understand a few fudge-stitch mechanisms constructed specifically as shown in patent No. 1,017,397, February 13, 1912, Fletcher and McLean, were used for a few months prior to the filing of the application for that patent.

*Cross-Int.* 580. On page 2293 of the printed record you make reference to patent to Hadaway dated June 25, 1912, relating, as I understand, to mechanism by which the presser-foot in an out-sole rapid lockstitch machine operates to force together the layers of stock before the formation of the stitch. Kindly state when, so far as you are advised, such mechanism was first incorporated in the lockstitch machine of the United Company.

*Ans.* The improvements defined in the claims of patent No.

1,030,582, June 25, 1912, Hadaway (application filed September 29, 1904), were first embodied in a commercial machine supplied by the United Shoe Machinery Company on May 21, 1910. Those improvements were incorporated in lockstitch machine, Goodyear out-sole rapid, model K, which, on that date, became the standard commercial out-sole stitching machine of the United Company. The improvements defined in the claims of that patent were also embodied in lockstitch machine, Goodyear out-sole rapid, model M, which, as appears from my corrected testimony in regard to that machine, was first put out for commercial use in June, 1911.

*Cross-Int.* 581. In your testimony with reference to out-sole rapid lockstitch machine, model M, you make reference, so far as the printed record is concerned, to the same having been first put out after the filing of the bill. You now, as I understand you, correct that testimony and say that it was first put out prior to the filing of the bill. In view, however, of the printed record, I would like permission to ask of you a general, concise statement of the organization of the model M out-sole sticher in so far as the stopping mechanism is concerned. I am led to submit this interrogatory because the printed record clearly shows your testimony to the effect that it was put out after the filing of the bill, and although I have no objection to the correction I would like you to describe the stopping mechanism as actually embodied in the model M machine.

Mr. PHILLIPS. Objected to as outside the scope of the order.

*Ans.* The mechanism for stopping lockstitch machine, Good-year out-sole rapid, model M, comprises means which, at whatever speed the machine is running at the time the operator wishes to stop it, first reduces the speed of the machine to a predetermined low speed, and then from that predetermined low speed stops the machine always at the same predetermined point in the cycle of its operation.

*Cross-Int.* 582. You have now stated the result of the operation of the mechanism. I would like to have spread on the record a brief statement or word picture of the mechanism. I desire this especially because I understand from your testimony no patent has

yet been issued which clearly shows such mechanism. I therefore ask you if it is not a fact that the mechanism employed by the United Company, crudely stated perhaps, comprises a shaft having a clutch, which shaft revolves backwardly or in a direction opposite to the forward motion of the shaft of the machine; that when it is desired to stop the machine a brake mechanism operates to check the forward motion of the main shaft of the machine; the clutch then revolving in an opposite direction is brought into engagement with a clutch on the main shaft and such clutch causes the reverse motion of the main shaft to a predetermined point.

Mr. PHILLIPS. Objected to as outside the order of the court.

Ans. No, sir; that is not a correct description of the operation of the stopping mechanism of the model M stitcher.

*Cross-Int.* 583. Will you kindly spread upon the record a brief description of the stopping mechanism as embodied in the model M machine, but which you say is not shown in any patent yet issued?

Mr. PHILLIPS. The same objection.

Ans. Lockstitch machine, Goodyear out-sole rapid, model M, comprises two mechanisms for operating the driving shaft of the machine. One of these, which may conveniently be termed the "high-speed driving mechanism", operates the driving shaft at the various speeds desired during the operation of the machine, varying from the highest speed on the straight and easy portions of the work, to the somewhat lower speeds generally desired on the more difficult portions of the work, as in the shank. The other driving mechanism may be conveniently termed the "low-speed driving mechanism". When the operator wishes to stop the machine he renders inoperative the high-speed driving mechanism and at the same time renders operative the low-speed driving mechanism. This low-speed driving mechanism first operates to reduce the speed of the machine to a predetermined low speed, and then it operates to drive the machine at that predetermined low speed until the point in the cycle of the machine's operations is reached at which the machine should stop. At that point the machine is automatically stopped, obviously with much less jar and less wear on the machine than would be the case if the machine were stopped

while running at its normal high speed. It is also obvious that by this construction the stopping will always take place at the proper predetermined point in the cycle of the machine's operation, which would probably be impossible if it were attempted to stop the machine while running at any of the varying high speeds at which the machine is normally operated.

*Cross-Int.* 584. Were the model M machines which you say were put out in 1911 constructed like the model M machine which you kindly showed to me in the building at the corner of Beach and Lincoln Streets very recently?

Mr. PHILLIPS. The same objection.

*Ans.* The model M stitcher as first put out in 1911 was constructed substantially as it is now constructed, and was substantially the same in respect to the mechanism described in my preceding answer as the machine which was exhibited to you in the Albany Building at the corner of Beach and Lincoln Streets.

*Cross-Int.* 585. And is the stopping mechanism of the model K welter the same as the stopping mechanism of the model M stitcher?

Mr. PHILLIPS. The same objection.

*Ans.* The stopping mechanism of the model K welter, officially known as "Shoe Machine — Model K : Goodyear Welt and Turn", embodies mechanisms substantially similar to those incorporated in the lockstitch machine, model M, Goodyear out-sole rapid, but in the model K welter the slow-speed driving mechanism runs in the opposite direction from the direction in which the high-speed driving mechanism operates.

*Cross-Int.* 586. Is any clutch mechanism employed in the stopping mechanism of either of these machines?

Mr. PHILLIPS. The same objection.

*Ans.* Yes, sir.

*Cross-Int.* 587. And is it employed in both?

Mr. PHILLIPS. The same objection.

*Ans.* Yes, sir.

*Cross-Int.* 588. And are the high and low-speed shafts driven independently of each other?

*Ans.* I don't quite understand the question.

*Cross-Int.* 589. Is an independent belt or driving mechanism employed to drive the low-speed shaft in both machines, or in either?

*Ans.* There is a separate belt for operating the slow-speed driving mechanism in each machine, if that is what is meant by the question.

*Cross-Int.* 590. And does the slow-speed shaft revolve continually?

*Ans.* The slow-speed driving mechanism is being continuously driven by its belt during the normal operation of the machine.

*Cross-Int.* 591. And the slow-speed mechanism in the welter revolves in a direction opposite to that of the stitcher; is that correct?

*Ans.* In the model K welter the slow-speed driving mechanism revolves in an opposite direction to that in which the driving shaft of the machine operates; while in the model M stitcher the slow-speed driving mechanism and the high-speed driving mechanism run in the same direction.

*Cross-Int.* 592. And in both machines is the stopping point predetermined?

*Ans.* Yes, sir.

*Cross-Int.* 593. In the model M stitcher is there any reverse movement after the slow-speed driving mechanism is put into operation?

*Ans.* No, sir.

*Cross-Int.* 594. And the clutch mechanism referred to in your previous answers is a friction clutch mechanism, is it not?

*Ans.* The slow-speed driving mechanism in the model M stitcher is so organized and constructed that it may serve, first, to reduce the speed of the machine to a predetermined low speed, and may then drive the machine at that predetermined low speed. It is perhaps proper to designate it roughly as a friction clutch mechanism.

The WITNESS. Referring to the correction which I have previously made in the sixth line of page 2301 of the printed record, I should like, if I may be permitted, to have the same correction

apply in any other instance where I stated that lockstitch machine, Goodyear out-sole rapid, model M, was first put out in January, 1912. The date of June 7, 1911, should be substituted in each such instance.

*Cross-Int.* 595. On page 2299 of the printed record, in referring to the presser-foot organization of the model M stitcher, you say: "This improved presser-foot organization . . . is not yet shown in a granted patent", and one of the features is set forth in broad terms in patent to Richardson. Can you briefly point out the construction referred to by you in that phraseology which differs from the one feature which you say is set forth in broad terms in the Richardson patent?

*Ans.* In the model M stitcher the presser-foot is automatically raised when the machine stops, so that the operator can remove the shoe upon which the machine has been operating and substitute another shoe for the operation of the machine without the necessity of twice lifting the presser-foot by hand. When the machine starts in its operation upon a new shoe the presser-foot is automatically lowered into pressing engagement with the work. It should, of course, be understood that there are other important differences in the organization and operation of the presser-foot mechanism on the model M machine, but I understand the one to which I have specifically referred is that to which the interrogatory had reference.

*Cross-Int.* 596. Am I to understand that you mean by your last answer that the mechanism by which the operation is performed, which you described, is not defined in the Richardson patent?

*Ans.* No, sir; I did not mean that, because the mechanism which I described embodies the improvement defined in claim 16 of the Richardson patent No. 710,613, October 7, 1902.

*Cross-Int.* 597. Please explain the difference between the mechanism not covered by patent and the mechanism defined in the Richardson patent as embodied in the model M stitcher.

*Ans.* Claim 16 of the Richardson patent No. 710,613 does not set forth mechanism for automatically lifting the presser-foot when

the machine stops, nor for automatically lowering the presser-foot into engagement with the work when the machine starts.

*Cross-Int.* 598. I note on page 2316 of the printed record you make reference to two patents issued after the filing of the bill, and in connection with the same I understand you to say that the model E rounding and channeling machine superseded the 1899 machine, but you do not state when the model E machine superseded the 1899 machine. Will you kindly state?

*Ans.* Rounding and channeling machine, Goodyear Universal, model E, was first shipped December 8, 1910, and since that date has been the standard commercial rounding and channeling machine furnished to shoe manufacturers by the United Shoe Machinery Company.

*Cross-Int.* 599. On page 2326 of the printed record you make reference to a patent to Bertrand issued after the filing of the bill, to wit, April 23, 1912, in connection with channeling machine, Goodyear Universal (welt work). Kindly state when such machine containing the mechanism of the Bertrand patent was first put out by the United Company.

*Ans.* Channeling machine, Goodyear Universal (welt work) was first put out by the United Company September 28, 1907, and the machine at that time and ever since embodied the mechanism set forth in claims of patent No. 1,023,801, April 23, 1912, Bertrand (application filed April 30, 1908).

*Cross-Int.* 600. For the convenience of Court and counsel, will you kindly state whether the several channeling machines referred to by you in the printed record, beginning on page 2318 and ending on page 2330, are illustrated in any exhibit or exhibits now in the record in this case? I refer particularly to illustrations other than in patents.

*Ans.* The Goodyear Universal insole channeling machine as it was put out prior to February, 1899, by the Goodyear Shoe Machinery Company, and for a time after that date by the United Shoe Machinery Company, is illustrated in Plaintiff's Exhibit No. 235. The insole channeling machine which was superseded by that machine is illustrated on page 95 of Plaintiff's Exhibit No.

220, which is the Goodyear Shoe Machinery Company's catalogue of January 1, 1897. I do not recall that channeling machine, Goodyear Universal (welt work), or channeling machine, Goodyear Universal (turn work), are illustrated in any exhibits other than certain of the patents which form a part of Defendants' Exhibit 119.

*Cross-Int.* 601. Would it be convenient for you, for the convenience of Court and counsel, to furnish cuts or illustrations of such channeling machines referred to in your previous answer as do not appear to be illustrated in any of the exhibits other than patents now in the record?

*Ans.* Yes, sir; I shall be glad to produce such illustrations.

*Cross-Int.* 602. In the printed record, beginning with page 2339 and ending with page 2345, you testify at some length concerning stitch-separating machines. Will you kindly state whether you understand such designation to indicate the class of machines known as "auxiliary machines"?

*Mr. PHILLIPS.* Objected to as outside the order of the court.

*Ans.* No, sir; that expression does not indicate the class of machines known as "auxiliary machines", but the stitch-separating machine put out by the United Shoe Machinery Company is an auxiliary machine of defendants' Goodyear department.

*Cross-Int.* 693. That is to say, it is a separate and distinct machine designed for stitch separation only; am I correct?

*Mr. PHILLIPS.* Same objection.

*Ans.* Yes, sir.

*Cross-Int.* 604. Will you state whether the stitch-separating machines to which you have made reference in your testimony are shown in any illustrations now in the record other than in patents?

*Mr. PHILLIPS.* Same objection.

*Ans.* The first type of commercial machine for separating stitches which was first put out by the Goodyear Shoe Machinery Company in September, 1895, and which is referred to on page 2340 of the record, is illustrated in the cut on page 89 of Plaintiff's Exhibit 220, Goodyear Shoe Machinery Company's catalogue of 1897. There is no illustration of later types of that machine, or of the

present commercial machine now in the record otherwise than in patents, so far as I recollect.

*Cross-Int.* 605. Would it be convenient for you to produce cuts or illustrations of the several stitch-separating machines with reference to which you have testified, other than the one which you say is already illustrated in one of the catalogues?

Mr. PHILLIPS. Same objection.

*Ans.* I think I can produce an illustration of the present commercial stitch-separating machine, and will endeavor to find and produce illustrations of the machine in different stages of its development since 1895.

Mr. WEBSTER. Kindly note that I do not ask for illustrations of anything other than machines with reference to which you have testified.

*Cross-Int.* 606. I note on page 2372 of the printed record you make reference to the Keyes patent issued February 18, 1913. Will you kindly state when, if at all, the mechanisms of the claims of the Keyes patent of 1913 were incorporated in the lasting machine to which you refer?

*Ans.* The improvements set forth in all of the six claims of patent No. 1,053,612, February 18, 1913, Keyes (application filed December 26, 1908), were incorporated in the Chase lasting machine in December, 1907, and all Chase lasting machines shipped since that date, and I believe all which were then out in shoe factories, have had these improvements embodied in them.

*Cross-Int.* 607. I do not find in the record a statement made by you as to the mechanisms of this Keyes patent of 1913. Can you conveniently briefly state the subject-matter of the claims?

*Ans.* It is the universal practice during the lasting operation to secure the lasted upper of welt shoes around the toe by means of wire instead of by means of tacks, as was the practice prior to 1898. The improvements of patent No. 1,053,612 relate to mechanism for supplying such wire for use on lasting machines of the bed type.

*Cross-Int.* 608. Is it not a fact that the alleged invention of the

Keyes patent of February 18, 1913, No. 1,053,612, relates to reels rather than lasters?

*Ans.* It is a fact that the patent No. 1,053,612 relates to reels particularly designed for use on lasting machines.

*Cross-Int.* 609. I observe on page 2377 of the printed record you make reference to patent to Brock, dated February 27, 1912, and as I understand your testimony you say that the mechanism of the claims of such patent were incorporated in the No. 5 lasting machine. Will you kindly state briefly just what the alleged improvements were?

*Ans.* Improvements set forth in one hundred and ten of the one hundred and sixteen claims of patent No. 1,018,477, February 27, 1912, Brock (application filed October 26, 1907), were incorporated in the No. 5 lasting machine as it was first put out for commercial use in January, 1908, and have ever since been embodied in that machine. These improvements have to do with nearly every part of the machine, but perhaps the most important improvements are those which adapted that machine for the first time in the industry to last satisfactorily shoes made upon modern crooked lasts, such as are shown in Defendants' Exhibit 137. The organization of the machine which enabled it to last shoes on crooked lasts satisfactorily was discussed by me on pages 2376 and 2377 of the printed record, and was also explained by me on pages 4276 to 4278 of the typewritten record [printed pages 4941-4943]. I shall be glad to make further explanations of the advantages of these improvements and of the many others which are set forth in the claims of patent No. 1,018,477, if desired.

*Cross-Int.* 610. I observe on page 2424 of the printed record, in commenting upon heel-compressing machines, you say: —

"The nail-arranging mechanism was constructed substantially as shown in patent No. 577,211, February 16, 1897, Small, and six of the seven claims of that patent define mechanism embodied in the nail-handling organization of that machine. That mechanism was also defined more broadly in the claims of patent No. 577,212, February 16, 1897, Small."

Will you kindly state whether the record is in error, and, if so, how it should be corrected?

*Ans.* Yes, that is an error. The number of the patent first mentioned in the quotation should be No. 577,213. The date is correct as it stands.

*Cross-Int.* 611. I note you say on page 2425: "The McKay Shoe Machinery Company just prior to February, 1899, did not have a satisfactory heel-compressing machine." Do you mean by that statement that the machine that that company had was abandoned and that a new construction was adopted by the United Company?

Mr. PHILLIPS. Objected to as outside the order of the court under which this testimony is taken.

*Ans.* Yes, sir; an entirely new machine was produced by the United Company.

*Cross-Int.* 612. Kindly state if a heel-compressing machine is properly designated as an auxiliary machine.

Mr. PHILLIPS. The same objection.

*Ans.* No, sir; I should not so designate it.

*Cross-Int.* 613. Is it not, to your knowledge, so designated in the leases of the United Company?

Mr. PHILLIPS. The same objection.

*Ans.* I do not recall; my duties do not require familiarity with the leases of the United Company.

*Cross-Int.* 614. Would you say that a machine for compressing top-lifts was an auxiliary machine?

Mr. PHILLIPS. The same objection.

*Ans.* I should not so regard it.

*Cross-Int.* 615. Would you say that a nailing machine was an auxiliary machine or a principal machine?

Mr. PHILLIPS. The same objection.

*Ans.* I should not regard a nailing machine as an auxiliary machine.

*Cross-Int.* 616. Would you regard it as a principal machine?

*Ans.* It is certainly a very important machine.

*Cross-Int.* 617. But you cannot state whether it is a principal machine or not?

Mr. PHILLIPS. The same objection, and further objected to because the witness is not called upon to define abstract terms.

*Ans.* I don't know that I understand what is meant by the term "principal machine", but I have no hesitation in stating that nail-ing machines are among the important machines supplied by the United Company.

*Cross-Int.* 618. And do you say you don't know whether it is designated by that company as one of its principal machines, or not?

Mr. PHILLIPS. The same objection, and further objected to because the witness is not called upon to hazard a guess as to the meaning of such terms, if employed by others.

*Ans.* I do not recall that in the heel-ing and metallic departments, through which nail-ing machines are put out, there is any division of the machines which would justify me in attaching more importance to one than to others.

*Cross-Int.* 619. Am I to understand from your last answer that from your standpoint each machine put out by the United Company is fully as important as every other machine?

Mr. PHILLIPS. Objected to as outside the order of the court.

*Ans.* No, sir.

*Cross-Int.* 620. Is there any line of demarcation between the most important and the less important machines, in your mind?

Mr. PHILLIPS. Objected to as outside the order of the court, and entirely immaterial and incompetent.

*Ans.* Some of the machines are doubtless more important than others.

*Cross-Int.* 621. Is there any objection to stating what machines you consider the most important?

Mr. PHILLIPS. Objected to as outside the order of the court under which this testimony is being taken, and immaterial and incompetent.

*Ans.* I could probably express my views in response to this interrogatory if desired, but should need some time to prepare such an answer as I would be willing to make.

*Cross-Int.* 622. Will you be good enough to prepare such an answer and submit it at the next session?

Mr. PHILLIPS. Objected to as outside the order of the court under which this testimony is being taken.

*Ans.* No, sir; because it would require more time than I could devote to it before the next session.

*Cross-Int.* 623. I notice on page 2467 of the printed record you refer to patent to Casgrain, dated February 13, 1912, in connection with which you say that claim 7 defines improvements embodied in Universal slugging machine. Kindly state when the invention defined in the seventh claim referred to was first embodied in the slugging machine.

*Ans.* The improvement defined in claim 7 of patent No. 1,017,-381, February 13, 1912 (application filed October 24, 1898), was embodied in machines first put out by the United Company in February, 1899, and has been incorporated in all machines put out since that date.

*Cross-Int.* 624. I note, beginning with page 2473 of the printed record you discuss heel-breasting machines. Will you kindly state briefly whether it is not a fact that a heel-breasting machine is a machine for cutting the face of the heel from the top-lift to the shank, that is, cutting off the surplus stock?

*Ans.* Yes, sir; a heel-breasting machine is used for removing the surplus stock on the front or breast face of the heel, from the top-lift to the shank of the sole.

*Cross-Int.* 625. And appliances for accomplishing this result have been in use for twenty-five years, have they not?

Mr. PHILLIPS. Objected to as outside the order of the court under which this testimony is being taken.

Mr. WEBSTER. The attention of counsel is respectfully called to the fact that heel-breasting machines are clearly within the order of the court because they are especially referred to in the motion to strike out.

*Ans.* Yes, sir.

*Cross-Int.* 626. And it has been universal, has it not, to accomplish the result by a moving blade or knife traveling down across the breast of the heel?

Mr. PHILLIPS. The same objection.

*Ans.* No, sir.

*Cross-Int.* 627. How, then, has it been done?

*Ans.* In some of the crude foot-power machines, such as were universally used before the introduction of the power machine by the United Shoe Machinery Company, the heel breast was trimmed by moving the shoe into engagement with a stationary knife.

*Cross-Int.* 628. Then the broad difference between the old type and the new type was that in one the shoe was moved, while in the other the blade moved; is that correct?

Mr. PHILLIPS. Same objection.

*Ans.* That is not at all correct.

*Cross-Int.* 629. Does it make any difference in the result of the operation whether the blade moves or the shoe moves?

Mr. PHILLIPS. Same objection.

*Ans.* The old foot-power machines were of two types. In one type the blade was moved and in the other type the shoe was moved. Manufacturers found one type or the other better suited for certain classes of work. In the power heel-breasting machine now known as "Heel Breasting Machine, Model B: Imperial", the knife moves with relation to the shoe, but that is not a very necessary incident of the very important improvements which characterize that machine.

*Cross-Int.* 630. The old type of machine was used for a great many years, was it not?

Mr. PHILLIPS. Same objection.

*Ans.* Yes, sir; the old types were used for many years.

*Cross-Int.* 631. On page 2493 you refer to channeling machine, Economy insole. Kindly state whether the channeling machine for an insole differs materially from a channeling machine for any other kind of a sole, and point out the difference.

*Ans.* Channeling machine, Economy insole, is a machine designed particularly and used for preparing the blank for reinforcement by canvas to produce the improved insole known as "Economy" insole. The United Company also supplies to manufacturers another machine known as "Channeling Machine, Goodyear Insole (welt work)", which is designed particularly for, and used for, channeling "all leather" insoles.

Both of these machines operate upon the insole before the insole

becomes a part of the shoe. Neither of them is adapted, nor can either of them be used, for channeling out-soles. It is a general practice to channel and round the out-sole after it has been temporarily attached to the shoe by cement, the machine for this purpose being known as a rounding and channeling machine. In short, the differences between insole and out-sole channeling machines are radical and fundamental.

*Cross-Int.* 632. Both are channels cut in the sole, aren't they?

Mr. PHILLIPS. Same objection.

*Ans.* I do not understand what is meant by the word "both" in the interrogatory.

*Cross-Int.* 633. The channel in an insole is cut in the sole, is it not?

*Ans.* An insole channeling machine forms two channels on the flesh side of an insole.

*Cross-Int.* 634. And how many channels does an out-sole channeling machine form?

*Ans.* The United Company does not put out any machine which may be characterized as an out-sole channeling machine. The rounding and channeling machine supplied by the United Company trims or rough-rounds the out-sole and simultaneously forms a single channel on the grain side of the sole to receive and conceal the outseam.

*Cross-Int.* 635. Is it not a fact known to you that an out-sole channeling machine was used by some one of the companies that went to make up the United Company after the United Company's organization?

Mr. PHILLIPS. Objected to as entirely outside the order of the court under which this testimony is being taken, and further as being incompetent, immaterial and irrelevant to any issue in this court.

*Ans.* A machine known as Goodyear out-sole channeling machine was supplied to manufacturers by the Goodyear Shoe Machinery Company prior to the invention and introduction to the trade of rounding and channeling machines, but that machine was obsolete

before the United Shoe Machinery Company was formed in February, 1899.

Mr. WEBSTER. All that portion of the answer beginning with the words "but that machine was obsolete" are objected to as non-responsive, and motion is made to strike the same from the record.

*Cross-Int.* 636. Through inadvertence yesterday I neglected to have the loaded heel to which you made reference marked as an exhibit. Will you now state to the examiner whether the heel I now hand you is the one you referred to yesterday?

*Ans.* Yes, sir; it is.

[*Loaded heel is introduced in evidence, and marked "Plaintiff's Exhibit 283".*]

*Cross-Int.* 637. Kindly examine the strip of welting I now hand you, and state whether it is a fair sample of the welting produced on one of the welt grooving and beveling machines, as testified to by you.

*Ans.* The piece of welting shown me was grooved, beveled and slashed on the Plant welt slasher and groover, shown on page 82 of the Plant catalogue Plaintiff's Exhibit 266.

[*Strip of welting grooved, beveled and slashed on Plant welt slasher and groover is marked "Plaintiff's Exhibit 284".*]

*Cross-Int.* 638. Did the United Company put out a machine for manufacturing such welting strips prior to the acquisition of the Plant outfit?

Mr. PHILLIPS. Objected to as outside the order of the court under which this testimony is being taken.

*Ans.* The United Company put out a machine which grooved and beveled the welt, but did not slash it, prior to the acquisition of the Plant patents.

*Cross-Int.* 639. Is it common for shoe manufacturers to use strips of welting grooved, beveled and slashed?

Mr. PHILLIPS. Objected to as outside the order of the court.

*Ans.* The usual practice is to use welting which has been grooved and beveled, and then, after the welt has been attached to the shoe, to slash it around the toe, but not elsewhere, during the welt-beating operation. The two operations of beating out the welt and

slashing it around the toe are performed as one operation on the United Company's machine "Beating and Slashing Machine—Goodyear Welt".

[*Adjourned to 10 a. m., Monday, March 2, 1914.*]

BOSTON, MASS., March 3, 1914.

*Cross-Int.* 640. On page 2473 of the printed record you testify with reference to heel breasting machine, model B, Imperial. Kindly examine the illustration I now hand you, and state whether it properly illustrates that machine.

*Ans.* The cut entitled "Imperial Heel Breasting Machine—Model B", illustrates the United Company's machine known as "Heel Breasting Machine—Model B: Imperial".

*Cross-Int.* 641. Will you kindly examine the illustration marked "Imperial Heel Breasting Machine—Model B", and mark thereon with the word "knife" connecting same with the cutting blade of that machine?

*Ans.* I have, as requested, indicated the knife on the cut of the machine in question, by writing the word "knife" at one side of the cut and running a lead line therefrom to the illustration of the knife in the machine.

*Cross-Int.* 642. On page 2485 of the printed record you testify with reference to "Turning and Slashing Machine, Goodyear Lip". Kindly examine the illustration I now hand you, and state whether it is a correct illustration of that machine.

*Ans.* Yes, sir; the cut inquired about, entitled "Turning and Slashing Machine, Goodyear Lip", correctly illustrates that machine.

*Cross-Int.* 643. The machine termed "Turning and Slashing Machine, Goodyear Lip", is a machine employed in connection with the Gem insole, is it not?

*Ans.* The machine is used in the preparation of the leather blank for reinforcement by canvas to produce the Gem insole, but it is also used upon all leather insoles, which is the use for which it was primarily designed.

*Cross-Int.* 644. Have you before you an illustration of the Gem insole; and, if so, will you kindly produce it?

Mr. PHILLIPS. Objected to as outside the order of the court.

*Ans.* I have no illustration of the Gem insole, but samples of Gem insoles constitute Defendants' Exhibits No. 17 and 167.

*Cross-Int.* 645. On page 2493 you testify with reference to "Channeling Machine, Economy Insole". If you have an illustration of that machine, will you kindly produce it?

*Ans.* As requested, I produce an illustration of that machine entitled "Economy Insole Channeling Machine".

*Cross-Int.* 646. On page 2496 you testify with reference to "Beating Machine, Goodyear Universal Welt". If you have an illustration of that machine before you, will you kindly produce it?

*Ans.* I produce an illustration of that machine entitled "Good-year Universal Welt Beating Machine".

*Cross-Int.* 647. On page 2497 of the printed record you testify with reference to "Beating and Slashing Machine, Goodyear Welt". If you have before you an illustration of that machine will you kindly produce it?

*Ans.* I produce an illustration of that machine entitled "Good-year Welt Beating and Slashing Machine".

*Cross-Int.* 648. On page 2512 of the printed record you testify with reference to "Skiving Machine, Goodyear Universal Shank". If you have an illustration of that machine before you, will you kindly produce it?

*Ans.* I produce an illustration of that machine entitled "Good-year Universal Shank Skiving Machine".

*Cross-Int.* 649. On page 2512 of the printed record you testify with reference to "Skiving Machine, Goodyear Shank Welt". If you have before you an illustration of that machine, will you kindly produce it?

*Ans.* I produce an illustration of that machine entitled "Good-year Shank Skiving Machine".

*Cross-Int.* 650. On page 2514 of the printed record you testify with reference to "Reducing Machine, Goodyear Outsole Channel Shank". If you have an illustration of that machine before you, will you kindly produce it?

*Ans.* I produce an illustration of that machine entitled "Good-year Outsole Channel Shank Reducing Machine".

*Cross-Int.* 651. On page 2517 of the printed record you testify with reference to "Indenting and Burnishing Machine, Goodyear Welt". If you have an illustration of that machine before you, will you kindly produce it?

*Ans.* I produce an illustration of that machine entitled "Good-year Welt Indenting and Burnishing Machine".

*Cross-Int.* 652. On page 2519 of the printed record you testify with reference to "Burnishing Machine No. 2 : Goodyear Impression Stitch". If you have an illustration of that machine before you, will you kindly produce it?

*Ans.* I produce an illustration of that machine entitled "Good-year Impression Stitch Burnishing Machine, No. 2".

*Cross-Int.* 653. On page 2522 of the printed record you testify with reference to "Trimming Machine -- Model A : Rex Upper". If you have an illustration of that machine before you, will you kindly produce it?

*Ans.* I produce an illustration of that machine entitled "Rex Upper Trimming Machine — Model A".

*Cross-Int.* 654. On page 2523 of the printed record you testify with reference to "Trimming Machine — Model H : Rex Upper". If you have an illustration of that machine before you, will you kindly produce it?

*Ans.* I produce an illustration of that machine entitled "Rex Upper Trimming Machine — Model H".

*Cross-Int.* 655. Somewhere in the record you make reference to "Assembling Spindle, Rex". Kindly state whether that machine is now in use, and if it was ever abandoned state as nearly as possible when.

Mr. PHILLIPS. Objected to as outside the order of the court.

*Ans.* The machine inquired about, "Assembling Spindle, Rex", was superseded in September, 1905, by "Assembling Machine : Rex", and "Assembling Spindle, Rex" has been obsolete since 1905.

*Cross-Int.* 656. Have you before you an illustration of that spindle or machine?

*Ans.* I have not been able as yet to secure an illustration of

"Assembling Spindle, Rex", although I may be able to get such an illustration in the course of a day.

*Cross-Int.* 657. On page 2554 you testify with reference to "Assembling Machine : Rex". If you have an illustration of that machine before you, will you kindly produce it?

*Ans.* The cut which I now produce, entitled "Rex Assembling Machine", is an illustration of that machine.

*Cross-Int.* 658. On page 2560 you testify with reference to "Pounding Machine: Rex", and "Pounding Machine — Model E, Rex". If you have illustrations of those machines before you, will you kindly produce them?

*Ans.* I produce an illustration entitled "Rex Pounding Machine —Model E". This machine when it was first introduced was known as "Pounding Machine: Rex", so that the illustration which I now produce shows the machine under both names.

*Cross-Int.* 659. On page 2562 you testify with reference to "Trimming Machine — Rex Toe". If you have an illustration of that machine, will you kindly produce it?

*Ans.* I produce a cut entitled "Rex Toe Trimming Machine — Model B", which shows the machine as it was put out after September, 1906, incorporating the improvements referred to at the bottom of page 2563 of the record.

*Cross-Int.* 660. On page 2564 you testify with reference to "Pounding and Trimming Machine — Rex Rotary", and "Pounding and Trimming Machine — Model B : Rex Rotary". If you have an illustration of that machine, or those machines, if there are two of them, will you kindly produce the same?

*Ans.* I produce an illustration entitled "Rex Rotary Pounding and Trimming Machine — Model B". This machine, when it was first put out in July, 1908, was known as "Pounding and Trimming Machine — Rex Rotary", so that the illustration which I now produce shows the machine as it was put out under both names.

*Cross-Int.* 661. Will you kindly examine the illustration entitled "Rex Rotary Pounding and Trimming Machine — Model B", and

indicate thereon the parts which operate upon the shoe by suitable terms, connecting the same with a line?

*Ans.* As requested, I have written on the illustration the words "ironing", "blocking", "pounding", "toe trimming" and "oiling", connecting these words with lead lines to the appropriate parts as shown in the illustration.

*Cross-Int.* 662. In order to avoid encumbering the record with repeated interrogatories, I will ask you the following general question: On the following noted pages you testified with reference to the following machines: —

	Page
Separating machine : Hadaway stitch . . . . .	2340
Compressing machine : Fisher . . . . .	2423
Compressing machine — model No. 4: automatic heel . . . . .	2425
Pounding machine — model C : Rex rotary . . . . .	2570
Pounding and Beating-up machine — model A : Rex rotary . . . . .	2570
Jointing machine : Goodyear — model A . . . . .	2611
Blacking machine — model A : Crest heel . . . . .	2622
Blacking machine — model B : Crest heel . . . . .	2624
Repairing machine — model A : patent leather . . . . .	2628
Assembling machine : Rex turn shoe . . . . .	2631
Beading machine: Columbia . . . . .	2632
Beveling machine — model B: Champion strip . . . . .	2632
Building machine: Pyramid heel — models B, C and D . . . . .	2632
Cementing machine: Hub lining — models E and F . . . . .	2633
Cementing machine —model X: Stanbon channel . . . . .	2633
Cementing machine: Star channel — model D . . . . .	2634
Cutting and Scoring machine: Insole — models D and E . . . . .	2635
Embossing machine — model B . . . . .	2635
Flexible Innersole machine — model X: Goodyear . . . . .	2637
Fudge Edge machine: Goodyear . . . . .	2638
Grooving and Beveling machine: Goodyear power welt . . . . .	2638
Marker: Improved Star sole . . . . .	2640
Nurling machine — model A . . . . .	2642
Opening machine — model C: Apex channel . . . . .	2643

	Page
Perforating machine — model B: Royal . . . . .	2643
Perforating machine — model M: Stanbon . . . . .	2643
Pincer: U S M C Bench . . . . .	2644
Pricking machine: Premier heel . . . . .	2644
Punching machine — model A: Royal tip . . . . .	2644
Reducing machine — model H: Rotary feather edge and shank . . . . .	2645
Rounding machine: Goodyear heel seat . . . . .	2645
Rounding machine: Planet sole — models C and D . . . . .	2645
Rounding and Randing machine: Goodyear heel seat . . . . .	2646
Sanding machine — model A: tap and sole . . . . .	2646
Scarfing machine — model N: tap . . . . .	2646
Scalloping machine — model B: top piece . . . . .	2647
Scouring machine — model X: heel . . . . .	2647
Skiving machine — model A: Champion shank . . . . .	2648
Skiving machine: Eros Rand . . . . .	2649
Skiving machine: Pluma — models C and D . . . . .	2649
Skiving and Finishing machine: Monarch counter and box toe . . . . .	2649
Skiving or Rand splitting machine — model C: Apex tap . . . . .	2650
Slashing machine: XX welt . . . . .	2650
Snipping machine: Goodyear insole toe . . . . .	2650
Softening machine: Toe — models C and D . . . . .	2651
Splitting machine: Empire — models C and D . . . . .	2651
Splitting machine: Summit . . . . .	2652
Stamping machine — model C: Eagle sole . . . . .	2652
Stamping machine — model C: Eagle upper . . . . .	2652
Stamping machine: Regent — models B and C . . . . .	2653
Sticking machine — shank piece: model B . . . . .	2653
Trimming machine: spring heel . . . . .	2655
Trimming machine: Ultima heel . . . . .	2655
Turning machine: Goodyear forepart . . . . .	2655
Turning machine: Goodyear heel . . . . .	2656
Turning machine: Goodyear lip . . . . .	2656
Turning machine: Goodyear welt edge . . . . .	2656
Wheeling machine — No. 2: Goodyear impression stitch . . . . .	2657

If you have illustrations of those machines, will you kindly produce them?

*Ans.* I produce illustrations of the machines inquired about, which are entitled as follows:—

- “ Hadaway Stitch Separating Machine.”
- “ Fisher Compressing Machine.”
- “ Automatic Heel Compressing Machine — No. 4.”
- “ Rex Rotary Pounding Machine — Model C.”
- “ Rex Rotary Pounding and Beating-up Machine — Model A.”
- “ Goodyear Jointing Machine — Model A.”
- “ Crest Heel Blacking Machine — Model A.”
- “ Crest Heel Blacking Machine — Model B.”
- “ Patent Leather Repairing Machine — Model A.”
- “ Rex Turn Shoe Assembling Machine.”
- “ Columbia Beading Machine.”
- “ Champion Strip Beveling Machine — Model B.”
- “ Pyramid Heel Building Machine — Model B.”
- “ Pyramid Heel Building Machine — Model C.”
- “ Pyramid Heel Building Machine — Model D.”
- “ Hub Lining Cementing Machine — Model E.”
- “ Hub Lining Cementing Machine — Model F.”
- “ Star Channel Cementing Machine — Model D.”
- “ Insole Lip Cutting and Scoring Machine — Model D.”
- “ Insole Lip Cutting and Scoring Machine — Model E.”
- “ Embossing Machine — Model B.”
- “ Flexible Innersole Machine — Model X: Goodyear.”
- “ Goodyear Fudge Edge Machine.”
- “ Goodyear Power Welt Grooving and Beveling Machine.”
- “ Improved Star Sole Marker.”
- “ Nurling Machine — Model A.”
- “ Apex Channel Opening Machine — Model C.”
- “ Royal Perforating Machine — Model B.”
- “ Stanbon Perforating Machine — Model M.”
- “ U S M C Bench Pincer.”
- “ Premier Heel Pricking Machine.”
- “ Royal Tip Punching Machine — Model A.”

- "Rotary Feather Edge and Shank Reducing Machine—Model H."
- "Goodyear Heel Seat Rounding Machine."
- "Planet Sole Rounding Machine — Model C."
- "Planet Sole Rounding Machine — Model D."
- "Goodyear Heel Seat Rounding and Randing Machine."
- "Tap and Sole Sanding Machine — Model A."
- "Tap Scarfing Machine — Model N."
- "Top Piece Scalloping Machine — Model B."
- "Heel Scouring Machine — Model X."
- "Champion Shank Skiving Machine — Model A."
- "Eros Rand Skiving Machine."
- "Pluma Skiving Machine — Model C."
- "Pluma Skiving Machine — Model D."
- "Monarch Counter and Box Toe Skiving and Finishing Machine."
- "Apex Tap Skiving or Rand Splitting Machine."
- "XX Welt Slashing Machine."
- "Goodyear Insole Toe Snipping Machine."
- "Toe Softening Machine — Model D."
- "Empire Splitting Machine — Model C."
- "Empire Splitting Machine — Model D."
- "Summit Splitting Machine."
- "Eagle Sole Stamping Machine — Model C."
- "Eagle Upper Stamping Machine — Model C."
- "Regent Stamping Machine — Model B."
- "Regent Stamping Machine — Model C."
- "Shank Piece Sticking Machine — Model B."
- "Spring Heel Trimming Machine."
- "Ultima Heel Trimming Machine."
- "Goodyear Forepart Turning Machine."
- "Goodyear Heel Turning Machine."
- "Goodyear Lip Turner."
- "Goodyear Welt Edge Turning Machine."

In the short time since you requested me to produce these illustrations, I have not been able to obtain illustrations of the two following machines : —

- "Cementing Machine — Model X : Stanbon Channel."
- "Wheeling Machine — No. 2 : Goodyear Impression Stitch."

I may be able to furnish illustrations of these two machines at a later hearing.

*Cross-Int.* 663. I am uncertain whether the illustration of "Rapid Noiseless Wonder Splitting Machine" has been introduced in evidence. I will ask you therefore to kindly examine the illustration I now hand you, and state whether it properly illustrates this machine, and if you answer yes, will you kindly write at the bottom of the illustration the proper title of the same?

Mr. PHILLIPS. Objected to as outside the order of the court.

*Ans.* The illustration submitted to me is a correct showing of the United Company's machine known as "Splitting Machine: Rapid Noiseless Wonder", and I have written that title on the cut.

*Cross-Int.* 664. I ask you the same question relative to the illustrations I now hand you. I have not in mind, however, the particular page upon which reference is made to these machines; but I will ask you to kindly examine the illustrations and state whether the titles marked thereon correctly identify the respective machines?

*Ans.* Cuts which have been handed to me correctly illustrate the following machines, the page of the printed record upon which they are mentioned being indicated in the following list opposite each name: —

	Page.
"Briggs Rough Rounding Machine" . . . . .	2303
"Goodyear Universal Rounding and Channeling Machine — Model E" . . . . .	2309
"Goodyear Universal Channeling Machine (Welt Work)" . . . . .	2323
"Goodyear Universal Channeling Machine (Turn Work)" . . . . .	2327
"Goodyear Outsole Channeling Machine" . . . . .	2330
"Goodyear Welt Beating Machine" . . . . .	2495
"Star Channel Cementing Machine — Model A" . . . . .	2633
"Star Channel Cementing Machine — Model C" . . . . .	2633
"Universal Double Clinch Machine" . . . . .	2634
"Economy Insole Reinforcing Machine" . . . . .	2491

[The illustrations identified by the witness at this session are put

*in evidence as a single physical exhibit, and it is requested that the same be marked "Plaintiff's Exhibit 285".]*

*Cross-Int.* 665. You kindly consented to produce a part of a heelng machine adapted to support a wood last. Will you kindly state briefly what the device is, and its employment in a heelng machine?

Mr. PHILLIPS. Objected to as outside the order of the court.

*Ans.* The device submitted for my inspection is the last support which was used on the Plant "heel attacher on wood lasts" and which is referred to on page 23b of Defendants' Exhibit 273.

[*Last support used on Plant "heel attacher on wood lasts" is offered in evidence, and marked "Plaintiff's Exhibit 286".*]

Mr. WEBSTER. Unless through inadvertence, accident or mistake, I have omitted to interrogate the witness with reference to some other matters, the cross-examination is closed, it being stated as at the outset of the cross-examination of this witness that the cross-examination is *de bene* and without waiver of objections, notices and motions.

*Direct Examination resumed by Mr. PHILLIPS.*

*Int.* 666. In your cross-examination your attention was called to page 2299 of the printed record and you were interrogated in regard to certain statements made by you in your direct examination before the examiner to the effect that certain mechanisms embodied in the model M stitcher were "not shown in a granted patent". Please state whether or not since that testimony was given by you any United States Letters Patent have been granted to the United Shoe Machinery Company relating to such mechanisms; if so, please produce such patent and point out the claims therein which, in your opinion, describe such mechanisms.

Mr. WEBSTER. Objected to as going into matters relating to patent issued after the filing of the bill herein, and therefore incompetent, inadmissible and irrelevant.

*Ans.* I produce a copy of patent No. 1,087,602, February 17, 1914, Nash, granted on an application filed June 16, 1906. This patent sets forth in all of its twelve claims mechanism embodied in

the present standard commercial out-sole stitching machine put out by the United Company, officially known as "Lockstitch Machine: Goodyear Outsole Rapid—Model M." The mechanisms set forth in the twelve claims of this patent have been incorporated in this machine since it was first put out in June, 1911. Each of the twelve claims recites the mechanism or features of the mechanism employed in that machine for raising the presser-foot from engagement with the work when the machine stops, and for lowering the presser-foot into engagement with work when the machine starts. A typical claim of this patent is the first, which is as follows:—

"[1] A shoe sewing machine having, in combination, stitch forming devices including a needle, driving mechanism therefor, a presser-foot, means operating automatically to raise the presser-foot at a certain point in each cycle of operations of the stitch forming devices, means under the control of the operator for stopping the machine at another point in the cycle of operations with the needle raised from the work, and mechanism normally inoperative during the sewing of the seam operating automatically to lift the presser-foot as the machine is stopped."

[*A Patent Office copy of the Nash patent referred to by the witness in his last answer is offered in evidence as "Defendants' Exhibit 346".*]

Mr. WEBSTER. The introduction of the exhibit is objected to for the reasons heretofore stated.

Int. 667. Referring to Defendants' Exhibit 346, and for the purpose of further identifying the same, will you state whether or not that is a patent which was issued upon application referred to in Defendants' Exhibit 273 in connection with "Stitcher (Plant catalogue, page 112)", and, if so, whether or not the claims referred to in said exhibit as allowed claims are included among the claims in said patent?

Mr. WEBSTER. The same objection repeated.

Ans. Yes, sir; this Nash patent, No. 1,087,602, was granted on application, serial No. 321,958, filed June 16, 1906, as to which the statement is made on page 17 of Defendants' Exhibit 273 that the allowed claims 3, 5, 7, 10 and 12 of that application were in-

fringed by the Plant stitcher. Those allowed claims were identical, respectively, with claims 3, 5, 7, 10 and 12 of the patent No. 1,087,602.

*Int.* 668. Please state whether or not, since your testimony in chief before the examiner, United States Letters Patent have been granted to the United Shoe Machinery Company relating to any other of the machines referred to by you in such direct examination. If so, please produce such patents, state to what machines they relate, and point out the claims, if any, therein, which describe mechanisms embodied in said machine.

[*It is stipulated that the objection heretofore made shall have the same force and effect as if repeated at length, wherever objection is made in the form of "Objection repeated", or "Same objection".*]

Mr. WEBSTER. Same objection repeated.

*Ans.* A number of United States Letters Patent have been granted to the United Shoe Machinery Company since I gave my testimony in chief before the examiner. These patents are as follows:—

**SHOE MACHINE, MODEL K, GOODYEAR WELT AND TURN.**

No. 1,076,878, October 28, 1913, Eppler [application filed July 27, 1911].

No. 1,079,436, November 25, 1913, Perry [application filed May 2, 1910].

Of these patents, the Eppler patent No. 1,076,878 sets forth in all of its twenty claims improvements embodied in the welt-holding, welt-cutting and welt-measuring mechanisms of shoe machine, model K, Goodyear welt and turn, as that machine has been constructed since it was first put out in June, 1911. Typical claims of this patent are the first, fourth and fifteenth, which are as follows:—

"[1] A sewing machine, having, in combination, stitch forming mechanism, devices for severing and holding the welt at the completion of the sewing, and means for maintaining the holding devices in engagement with the welt during at least one cycle of operations of the machine at the beginning of the sewing operation, substantially as described."

"[4] A sewing machine, having, in combination, stitch forming mechanism, welt severing and holding devices mounted for movement with the shoe, and means for operating the devices to sever and hold the welt at the completion of the sewing operation, substantially as described."

"[15] A sewing machine, having, in combination, stitch forming mechanism, and means for determining the amount of welt drawn forward in the removal of the shoe rendered active by the reversal of the machine, substantially as described."

Perry patent No. 1,079,436 sets forth in broad terms in claims 7, 8, 9 and 10 improvements embodied in the welt-holding mechanism of shoe machine, model K, Goodyear welt and turn, ever since that machine was first put out in June, 1911. A typical claim is the seventh, which is as follows:—

"[7] A welt sewing machine, having, in combination, stitch forming mechanism, a welt holder for holding the end of the welt in the rear of the sewing point, and mechanism for retaining the holder in engagement with the welt and moving it with the shoe independently of this engagement with the shoe during at least one cycle of operations of the machine, substantially as described."

#### SHOE MACHINE, MODEL G, GOODYEAR WELT AND TURN.

No. 1,076,201, October 21, 1913, Eppler [application filed November 22, 1909].

The improvements set forth in claims 1, 2, 3, 4, 7 and 8 to 11, inclusive, of this patent were embodied in shoe machine, Goodyear welt and turn, model G, from the time of its introduction in October, 1908, until it was superseded by shoe machine, model K, Goodyear welt and turn. Among the improvements defined in these claims, the welt guide and means for operating it were important. The nature of this improvement is well indicated in the first claim of that patent, which is as follows:—

"[1] An inseam shoe sewing machine, having, in combination, stitch forming devices, a welt guide, means acting during the normal operation of the machine in sewing a seam to move the guide toward and from the shoe during each cycle of operations of the machine, and means for holding the guide in advance position during at least one cycle of operations of the machine."

**ASSEMBLING MACHINE, REX.**

No. 1,076,620, October 21, 1913, Ashton [application filed October 26, 1907].

No. 1,081,872, December 16, 1913, Stiggins [application filed October 13, 1902].

The first of these patents, No. 1,076,620, is the patent on the method practiced in the operation of assembling machine, Rex. On pages 2557 and 2558 of the record I stated that this method was set forth in the claims of an allowed application filed October 26, 1907, and that the patent would be granted on this application October 21, 1913. This patent No. 1,076,620 is the patent which was granted on that application. All of the five claims of that patent define the method which is practiced in the operation of both models of assembling machine, Rex. The first claim of the patent is quoted on page 2558 of the record.

Claims 7 and 15 of patent 1,081,872 set forth in broad terms the organization for supporting the shoe for the operation of the machine and for operating that in proper time relation to the operations of other parts of the assembling machine. The improvement set forth in these two claims, 7 and 15, has been incorporated in assembling machine, Rex, and its successor, assembling machine, model E, Rex, since September, 1905.

**NAILING MACHINE: ALPHA WOOD HEEL.**

No. 1,081,917, December 16, 1913, Tripp [application filed August 1, 1907].

On page 2464 of the record I stated that this machine was not shown in any patent which had as yet been granted, but that it was shown in the drawings and described in claims of a pending application filed August 1, 1907. This patent, No. 1,081,917, was granted on the application to which I then referred. The improvements set forth in all of the eighteen claims of this patent have been embodied in nailing machine, Alpha wood heel, ever since that machine was first put out in 1907. A typical claim is the first: —

"[1] A heel attaching machine, having in combination, means for pressing a heel upon the heel seat of a shoe arranged to exert

pressure toward the heel seat upon a predetermined portion of the surface of the heel at the rear intermediate its tread surface and its heel seat surface and constructed for adjustment to accommodate heels varying in size or contour, and means for securing the heel to the shoe."

The improvements set forth in the claims of this Tripp patent No. 1,081,917 made it possible for the first time in the industry to attach wooden heels to shoes by a machine.

#### CEMENTING MACHINE, MODEL F : HUB LINING.

No. 1,080,959, December 9, 1913, Eaton [application filed September 19, 1908].

The improvements set forth in claims 3, 4 and 5 of this patent No. 1,080,959 have been embodied in cementing machine, model F, Hub lining, since the machine was first introduced in October, 1911.

#### FINISHING MACHINE, U. S. M. C. BUTTONHOLE.

No. 1,080,341, December 2, 1913, Hill [application filed January 24, 1910].

No. 1,080,342, December 2, 1913, Hill [application filed March 7, 1911].

No. 1,080,343, December 2, 1913, Hill [application filed April 1, 1911].

Of these patents, No. 1,080,341 sets forth the general organization of finishing machine, U.S.M.C. buttonhole, in claims 1, 2, 3, 5, 6, 15 to 22, 41, 45, 54, 55 and 59. The starting and stopping mechanism of this machine is set forth in claims 3, 8 to 11 and 15 to 17 of patent No. 1,080,342. The needle-actuating mechanism of this machine is defined in claims 1, 2, 4, 5, 6 and 17 of patent No. 1,080,343.

#### GROOVING AND BEVELING MACHINE, MODEL X: GOODYEAR WELT.

No. 1,076,073, October 21, 1913, Stanbon [application filed December 9, 1911].

This patent sets forth in all of its six claims improvements which were embodied in the Plant welt slasher and groover, shown on page 83 of the Plant catalogue of Plaintiff's Exhibit 266. While

the application for the patent was not filed until after the Plant acquisition, the improvements were embodied in the Plant welt slasher and groover before the acquisition of the Plant patents by the United Company.

**LASTING MACHINE, U. S. M. C., No. 5.**

No. 1,085,400, January 27, 1914, Brown [application filed March 1, 1911].

The twenty-eighth claim of this patent sets forth in broad terms an important improvement embodied in the hold-down mechanism of lasting machine, U. S. M. C., No. 5, which was adopted in August, 1910, and has been used continuously on the machine ever since that time.

**LOCKSTITCH MACHINE, MODEL M : GOODYEAR OUTSOLE RAPID.**

No. 1,080,877, December 9, 1913, Ashworth [original application filed October 3, 1910].

No. 1,087,602, February 17, 1914, Nash [application filed June 16, 1906].

The Nash patent No. 1,087,602 was discussed by me in my answer to a preceding interrogatory.

The Ashworth patent No. 1,080,877 sets forth in each of its five claims an improvement in the needle oiling mechanism which has been embodied in lockstitch machine, model M, Goodyear out-sole rapid, since that machine was first put out in June, 1911, and was also embodied in lockstitch machine, model K, Goodyear out-sole rapid, from the time when that machine was first put into commercial use in May, 1910.

**MAKING MACHINE: BUTTONHOLE.**

No. 1,080,342, December 2, 1913, Hill [application filed March 7, 1911].

No. 1,088,420, February 24, 1914, Hill [original application filed February 10, 1912].

The first of these patents is one of the patents on finishing machine, U. S. M. C., buttonhole, to which I have already referred.

One claim, the fifteenth, of this patent sets forth mechanism which is also embodied in making machine, buttonhole.

All of the eight claims of patent No. 1,088,420 set forth improvements which are embodied in making machine, buttonhole.

**MARKER : IMPROVED STAR SOLE.**

No. 1,083,278, January 6, 1914, Gordon [application filed March 2, 1911].

The two claims of this patent set forth improvements which have been embodied in marker, improved Star sole, since the latter part of 1910.

**MOLDING MACHINE: AMERICAN TWIN SOLE.**

No. 1,084,526, January 13, 1914, Ball [application filed November 14, 1908].

Claims 1 to 5 and 8 to 11 of this patent set forth improvements which have been embodied in molding machine: American twin sole, model B, since September, 1911, and molding machine: American twin sole, model C, since that machine was first introduced in May, 1911. The improvements set forth in these claims are designed to enable an expert operator to run the machines at a higher speed than was practicable before the improvements were incorporated in the machines, while at the same time rendering the machines safe and satisfactory for unskilled operators.

**POUNDING AND BEATING-UP MACHINE, MODEL A: REX ROTARY.**

No. 1,076,940, October 28, 1913, Ashton [application filed September 11, 1911].

This patent is the one to which I made general reference at the bottom of page 2570 of the record, and sets forth in all of its twenty-three claims improvements embodied in pounding and beating-up machine, model A, Rex rotary. Typical claims of this patent are the first and twelfth, which are as follows:—

"[1] In a machine of the class described, a rotary beater comprising a carrier and a plurality of beating members consisting of spiral coils arranged about the periphery of the carrier and mounted to permit them to move radially with relation to the axis of the carrier."

"[12] A rotary beater comprising a carrier and a plurality of beating members consisting of an annular series of resilient coils arranged about the periphery of the carrier and extending lengthwise thereof to form collectively a normally cylindrical beating surface concentric with the axis of rotation of the carrier."

#### PULLING AND RESETTING MACHINE, GOODYEAR TACK.

No. 1,081,456, December 16, 1913, MacKenzie [application filed January 11, 1911].

This patent sets forth in all of its fourteen claims, and illustrates in its drawings, the commercial form of the stay tack driving mechanism of pulling and resetting machine, Goodyear tack. The mechanism was referred to near the top of page 2528 of the record.

#### PULLING-OVER MACHINE, MODELS A, B AND C: REX.

No. 1,082,487, December 30, 1913, Bates [application filed March 2, 1908].

No. 1,082,488, December 30, 1913, Bates [original application filed March 2, 1908].

These two patents set forth improvements which were first embodied in pulling over machine, model A, in June, 1910, which were incorporated in pulling-over machine, model B, Rex, when that machine was first put out in July, 1910, and have been incorporated in pulling-over machine, model C, Rex, since that machine was first shipped in March, 1911.

#### REDUCING MACHINE, GOODYEAR OUTSOLE CHANNEL SHANK.

No. 1,080,171, December 2, 1913, Ross and Freeman [application filed May 27, 1909].

This patent, which was granted on the application referred to by me near the bottom of page 2514 of the record, shows in its drawings substantially the commercial reducing machine, Goodyear outsole channel shank, and sets forth in all of its twenty claims mechanisms embodied in that machine. Typical claims of this patent are the following:—

"[1] A skiving machine, having, in combination, a work support arranged to support the projecting edge of the sole of a shoe in position to be acted upon by a skiving knife and a feed roll rela-

tively yielding to compensate for variations in the thickness of the sole, and a skiving knife blade maintained in fixed relation to the feed roll with its edge continuously in position to shave a skiving from the lower outer margin of the sole, substantially as described."

"[9] A skiving machine, having, in combination, devices adapted to engage the opposite surfaces of a channeled, attached outsole, for feeding the same, a channel guard and a skiver extending between the devices and terminating adjacent the guard, substantially as described."

**ROUNDING AND RANDING MACHINE : GOODYEAR HEEL SEAT.**

No. 1,080,191, December 2, 1913, Baxter [application filed April 4, 1912].

The commercial form of this machine is shown in the drawings of this patent and is set forth in claims 4 to 10. This patent, No. 1,080,191, is the application referred to by me on page 2646 of the record. The improvements set forth in these claims have been embodied in this machine throughout its entire period of development, beginning early in 1911.

**SCARFING MACHINE — MODEL M : TAP.**

No. 1,082,629, December 30, 1913, Hadaway [application filed March 8, 1910].

The improvements set forth in all of the eleven claims of this patent have been embodied in this machine since its introduction in September, 1910.

**SKIVING MACHINE — MODELS C AND D : PLUMA.**

No. 1,079,462, November 25, 1913, Alexander [application filed November 8, 1909].

The improvements set forth in the first six claims of this patent have been incorporated in skiving machine, model C, Pluma, since the machine was first put out in April, 1909, and in skiving machine, model D, Pluma, since that model was first put out in 1910.

**SKIVING MACHINE, MODEL D: PLUMA.**

No. 1,076,934, October 28, 1913, Alexander [application filed October 16, 1909].

No. 1,084,521, January 13, 1914, Alexander [application filed February 21, 1913].

The improvements set forth in all six claims of patent No. 1,076,934 were embodied in skiving machine, model D, Pluma, when that machine was first put out in November, 1910, and these improvements have been embodied in that machine ever since that date.

The improvements set forth in all of the four claims of patent No. 1,084,521 have been embodied in skiving machine, model D, Pluma, since November, 1912.

#### SNIPPING MACHINE, GOODYEAR INSOLE TOE.

No. 1,087,578, February 17, 1914, Hadaway [application filed October 13, 1910].

This machine is illustrated in its commercial form in the drawings of this patent No. 1,087,578, and all of the twelve claims of the patent set forth improvements which have been embodied in the machine since it was first put out in May, 1911. A typical claim is the first:—

"[1] An insole toe cutting machine, having, in combination, a work table, two power driven knives to co-operate therewith, one of said knives being arranged to incise the lip of an insole placed on the work table, and the other of said knives being arranged to incise the channel flap of said insole, engaging means to position the insole with relation to the knives."

**Mr. WEBSTER.** Answer objected to for the reason that it relates in substantially all its parts to matters not even remotely touched upon in the cross-examination of this witness, and for the further reason that it relates wholly to patents issued after the filing of the bill herein, and for the further reason that the testimony is inadmissible and incompetent, having no bearing whatever on the issues involved herein at the date of the filing of the bill, and counsel for the plaintiff moves that the answer be stricken from the record.

*Int.* 669. Have you collected in a single volume the patents referred to in your last answer?

*Ans.* I have and produce a volume of patents entitled "Copies

of Patents recently granted on machines referred to in Mr. Howard's direct testimony before the Examiner."

[*Volume of patents entitled "Copies of Patents recently granted on machines referred to in Mr. Howard's direct testimony before the Examiner" is marked "Defendants' Exhibit 347".*]

Mr. WEBSTER. The introduction of the exhibit is objected to for the reasons stated in the objections to the question and answer.

Mr. PHILLIPS. The attention of the Court is called to the introduction by the plaintiff, during Mr. Howard's present cross-examination, of Exhibit 285, illustrations of machines testified to by Mr. Howard, and also to Mr. Howard's cross-examination as to his statements in his direct examination before the examiner as to mechanisms forming the subject-matter of patents not yet granted.

Mr. WEBSTER. Counsel for the plaintiff states on the record that while it is true that various illustrations were introduced in the record in the cross-examination of this witness, no reference was made at the time with reference to patents issued either before or after the filing of the bill, and attention is called to the fact that among the patents offered in evidence by the defendants and marked "Defendants' Exhibit 347" there appear various patents, the applications for which were filed after the filing of the bill herein.

*Int. 670.* Please state on the record the number, date and name of patentee of the several patents forming Defendants' Exhibit 347.

Mr. WEBSTER. The same objection repeated.

*Ans.* DEFENDANTS' EXHIBIT 347.

No. 1,076,073, October 21, 1913, Stanbon [application filed December 9, 1911].

No. 1,076,201, October 21, 1913, Eppler [application filed November 22, 1909].

No. 1,076,620, October 21, 1913, Ashton [original application filed August 15, 1906].

No. 1,076,878, October 28, 1913, Eppler [application filed July 27, 1911].

No. 1,076,934, October 28, 1913, Alexander [application filed October 16, 1909].

No. 1,076,940, October 28, 1913, Ashton [application filed September 11, 1911].

No. 1,079,436, November 25, 1913, Perry [application filed May 2, 1910].

No. 1,079,462, November 25, 1913, Alexander [application filed November 8, 1909].

No. 1,080,171, December 2, 1913, Ross and Freeman [application filed May 27, 1909].

No. 1,080,191, December 2, 1913, Baxter [application filed April 4, 1912].

No. 1,080,341, December 2, 1913, Hill [application filed January 24, 1910].

No. 1,080,342, December 2, 1913, Hill [application filed March 7, 1911].

No. 1,080,343, December 2, 1913, Hill [application filed April 1, 1911].

No. 1,080,877, December 9, 1913, Ashworth [original application filed October 3, 1910].

No. 1,080,959, December 9, 1913, Eaton [application filed September 19, 1908].

No. 1,081,456, December 16, 1913, MacKenzie [application filed January 11, 1911].

No. 1,081,872, December 16, 1913, Stiggins [application filed October 13, 1902].

No. 1,081,917, December 16, 1913, Tripp [application filed August 1, 1907].

No. 1,082,487, December 30, 1913, Bates [application filed March 2, 1908].

No. 1,082,488, December 30, 1913, Bates [original application filed March 2, 1908].

No. 1,082,629, December 30, 1913, Hadaway [application filed March 8, 1910].

No. 1,083,278, January 6, 1914, Gordon [application filed March 2, 1911].

No. 1,084,521, January 13, 1914, Alexander [application filed February 21, 1913].

No. 1,084,526, January 13, 1914, Ball [application filed November 14, 1908].

No. 1,085,400, January 27, 1914, Brown [application filed March 1, 1911].

No. 1,087,578, February 17, 1914, Hadaway [application filed October 13, 1910].

No. 1,087,602, February 17, 1914, Nash [application filed June 16, 1906].

No. 1,088,420, February 24, 1914, Hill [original application filed February 10, 1912].

*Int.* 671. In your cross-examination you were asked about Plaintiff's Exhibits No. 281 and 282. Have you anything to add to your testimony in regard to such exhibits; if so, state it.

*Ans.* With reference to Plaintiff's Exhibit 282 I stated, on page 4352 of the typewritten record [printed page 2836 (26)], that the shoe of this exhibit "appears to be a woman's welt shoe, unusually heavy and of large size". I should have added that the shoe of this exhibit is what is known in the trade as a "mannish shoe". On comparing the shoe of Exhibit 282 with the man's shoe of Exhibit 281, it will be noted that the sole of Exhibit 282 is as heavy as the sole of the man's shoe of Exhibit 281, and that the heel of the woman's shoe of Exhibit 282 is of substantially the same height as the heel of the shoe of Exhibit 281.

At no time during the past sixteen or eighteen years has more than a very small percentage of women's shoes been made as heavy or substantially as heavy as the shoe of Plaintiff's Exhibit 282. The reason why relatively few women's shoes have been of this character, that is, of the type known as "mannish shoe", is that it is a shoe which is purchased and worn only by well-to-do women who can afford to have a large number of pairs of shoes for all sorts of occasions. Such a shoe would be worn only occasionally, in stormy weather, or for tramping or mountain climbing. In other words, the shoe of Plaintiff's Exhibit 282 is not at all a typical woman's shoe. I produce three women's welt shoes of different types which I regard as typical women's shoes.

[*Three women's welt shoes are offered in evidence, and marked,*

respectively, "Defendants' Exhibit 348", "Defendants' Exhibit 349" and "Defendants' Exhibit 350".]

Practically every woman has a pair of shoes of the character indicated by Defendants' Exhibits 348 and 349, which are ordinary women's street shoes. Defendants' Exhibit 350 is a more dressy shoe, and nearly every woman provides herself with a pair of shoes of this character for social occasions. The ordinary woman, instead of going to the expense of providing herself with an additional pair of heavy shoes, such as is illustrated in Plaintiff's Exhibit 282, would, in stormy weather, wear a shoe of the character indicated in Defendants' Exhibit 348 and 349, with a pair of rubbers to protect her shoes and feet.

Mr. WEBSTER. All that portion of the foregoing answer, beginning with "at no time during the past sixteen or eighteen years" is objected to as in the nature of argument pure and simple and as in no wise in the nature of testimony responsive to, or to meet any, interrogatories submitted by the plaintiff. Notice is given that motion will be made to strike out all the said argument at some convenient time in the future.

Mr. PHILLIPS. The redirect examination of this witness is closed, unless counsel shall find that by inadvertence he has neglected to ask the witness a question.

[*Adjourned to 10 A. M., March 4, 1914.*]

BOSTON, MASS., March 4, 1914.

*Cross Examination resumed by Mr. WEBSTER.*

Mr. WEBSTER. The testimony with reference to patents issued after the filing of the bill herein having been seasonably objected to, the recross-examination will be *de bene esse* and without waiver of the objections entered.

*Cross-Int. 672.* You have now testified with reference to twenty-eight patents, all issued after the filing of the bill herein. Kindly state whether any of those patents were issued upon applications which were acquired in the Plant acquisition.

Mr. PHILLIPS. Objected to as outside the order of the court.

*Ans.* No, sir; although I ought to explain that patent No.

1,076,073, October 21, 1913, Stanbon, granted on an application filed December 9, 1911, sets forth in its claims improvements which were made by C. P. Stanbon for Plant and which were incorporated in the Plant welt slasher and groover at the date of the acquisition of the Plant patents in September, 1910.

*Cross-Int.* 673. One would be led to believe from your employment of the term "welt slasher and groover" that the Stanbon patent related to a machine somewhat broadly. Kindly state if it is not a fact that the Stanbon patent referred to relates simply and only to a box for holding rolls of welt, which box might be employed in connection with any machine wherein it was desirable to hold a roll of welting.

Mr. PHILLIPS. Question objected to as containing argumentative statements of counsel, and as improper cross-examination.

*Ans.* As stated in the interrogatory, patent No. 1,076,073 sets forth and claims "improvements in boxes for holding rolls of welt". Those improvements could doubtless be advantageously used on any machine presenting similar difficulties and problems to those which were encountered in the use of the Plant welt slasher and groover. The improvements were, however, designed for the Plant welt slasher and groover and are illustrated in the drawings of the patent as incorporated in that machine. The improvements of this patent No. 1,076,073 are also illustrated as embodied in the Plant welt slasher and Groover in the cut on page 82 of the Plant catalogue Plaintiff's Exhibit 266.

*Cross-Int.* 674. And would you say that the welt slasher and groover would be inoperative without having incorporated therein the mechanism of the Stanbon patent about which you have been testifying?

*Ans.* No, sir; I should not wish to make so strong a statement as that as to the value of the improvements of patent No. 1,076,-073. I should prefer to characterize these improvements as very useful parts of the Plant welt slasher and groover.

*Cross-Int.* 675. Among the twenty-eight patents issued after the filing of the bill herein, altogether forming the volume of copies of patents Defendants' Exhibit 347, I observe that four, issued on

the applications of Hill, relate to buttonhole finishing. Am I right, that all of the Hill patents in the exhibit relate to buttonholes and buttonhole-sewing machines, and do not relate in any wise to welt and turn machines or rapid out-sole stitchers?

Mr. PHILLIPS. Question objected to as containing argumentative statements of counsel, and as improper cross-examination.

*Ans.* The statements in the interrogatory not being entirely correct, I will answer the question by stating that three of the Hill patents, namely, No. 1,080,341, No. 1,080,342 and No. 1,080,343, relate to buttonhole finishing machines and one of the Hill patents, No. 1,088,420, sets forth improvements in buttonhole-making machines.

*Cross-Int.* 676. I note that all the twenty-eight patents issued after the filing of the bill were issued to the United Shoe Machinery Company. Can you state whether the United Shoe Machinery Company had a transfer of these alleged inventions or applications at the time they were filed and had the control and management of the applications during the time they were pending?

*Ans.* That is true as to nearly all of the applications upon which were granted the patents included in Defendants' Exhibit No. 347. It may be true of all of them, but I am in doubt as to several without examining the files of our assignments.

*Cross-Int.* 667. I observe the patent issued on the application of E. A. Stiggins, lasting machine, dated December 16, 1913, recites that the application was filed on October 13, 1902. I note also that the drawings are signed by yourself as attorney for the applicants. Have you any objection to explaining to the court the cause of eleven years' delay in the issue of that patent after the filing of the application?

Mr. PHILLIPS. Question objected to as entirely outside the scope of the order of the court under which this testimony is being taken, and as being incompetent, immaterial and irrelevant.

*Ans.* I have no objection whatever to making the explanation suggested, but I should need to refresh my recollection by examination of the file of the application for this patent, which I have not at hand at this time.

*Cross-Int.* 678. Is it your opinion that the Plant machines, or any of them, fell within the terms of the claims of any of the patents to which you have testified and which issued after the filing of the bill herein? And, if you answer yes, kindly answer briefly, stating the particular kind of machines, but without going into detail.

Mr. PHILLIPS. Objected to as outside the scope of the order of the court under which this testimony is being taken.

*Ans.* I fear that I do not quite understand the interrogatory. Of course, as is set forth in detail in Defendants' Exhibit 273, entitled "Infringement by Plant machines of patents and applications of the United Shoe Machinery Company", the Plant machines embodied improvements set forth in the claims of a number of patents owned by the United Shoe Machinery Company which were issued after the filing of the petition in this suit, and which, when issued, contained claims which were allowed in the respective applications prior to September, 1910, the subjects-matter of which claims were incorporated in Plant machines. I am in doubt as to whether I should construe the interrogatory as including those patents.

*Cross-Int.* 679. Did the Plant welt and turn machine contain mechanism such as is set forth in the claims of the patent to Eppler No. 1,076,201, dated October 21, 1913? I do not ask you for the particular claims, if any, but simply a brief answer, yes or no, if you can answer in that manner.

Mr. PHILLIPS. The same objection.

*Ans.* No, sir.

*Cross-Int.* 680. I ask the same question with reference to patent to Eppler No. 1,076,878, dated October 28, 1913, and ask you to consider the question as applying to both welters and stitchers?

Mr. PHILLIPS. The same objection.

*Ans.* No, sir.

*Cross-Int.* 681. Did the Plant welt and turn machine contain a mechanism such as defined in any of the claims of patent to Perry No. 1,079,436, dated November 25, 1913?

Mr. PHILLIPS. The same objection.

*Ans.* No, sir.

*Cross-Int.* 682. Did any of the Plant machines contain mechanism such as is defined in any of the claims of patent to Baxter No. 1,080,191, dated December 2, 1913?

Mr. PHILLIPS. The same objection.

*Ans.* No, sir.

*Cross-Int.* 683. Did any of the Plant machines contain a mechanism such as is referred to in any of the claims of patent to Ashworth No. 1,080,877, dated December 9, 1913?

Mr. PHILLIPS. The same objection.

*Ans.* No, sir.

*Cross-Int.* 684. Did any of the Plant machines contain a mechanism such as is referred to in the claims of the patent to MacKenzie, tack-driving machine, No. 1,081,456, dated December 16, 1913?

Mr. PHILLIPS. The same objection.

*Ans.* No, sir.

*Cross-Int.* 685. The same question is asked with reference to patent to Stiggins, lasting machine, No. 1,081,872, dated December 16, 1913?

Mr. PHILLIPS. The same objection.

*Ans.* No, sir.

*Cross-Int.* 686. The same question is asked with reference to patent to Tripp, heel-attaching machine, No. 1,081,917, dated December 16, 1913.

Mr. PHILLIPS. The same objection.

*Ans.* Yes, sir; seven claims of the application for that patent No. 1,081,917, December 16, 1913 (application filed August 1, 1907), were infringed by both the Plant heeler and the Plant heel attacher on wood lasts.

*Cross-Int.* 687. The same question is asked with reference to patent to Bates, machine for use in the manufacture of boots and shoes, No. 1,082,487, dated December 30, 1913?

Mr. PHILLIPS. The same objection.

*Ans.* No, sir.

*Cross-Int.* 688. The same question is asked with reference to

patent to Ball, starting and stopping mechanism, No. 1,084,526, January 13, 1914?

Mr. PHILLIPS. The same objection.

Ans. No, sir.

*Cross-Int.* 689. The same question is asked with reference to patent to Brown, hold-down, No. 1,085,400, January 27, 1914?

Mr. PHILLIPS. The same objection.

Ans. No, sir.

*Cross-Int.* 690. The same question is asked with reference to patent to Hadaway, insole toe-cutting machine, No. 1,087,578, dated February 17, 1914?

Mr. PHILLIPS. The same objection.

Ans. No, sir.

*Cross-Int.* 691. The same question is asked with reference to patent to Nash, sewing machine, No. 1,087,602, dated February 17, 1914?

Mr. PHILLIPS. The same objection.

Ans. Yes, sir; as pointed out on page 17 of Defendants' Exhibit 273, the Plant stitcher infringed five allowed claims of the application for patent No. 1,087,602, February 17, 1914, Nash (application filed June 16, 1906).

*Cross-Int.* 692. Referring now briefly to your testimony with reference to Plaintiff's Exhibits 281 and 282, I understand you to say that at no time during the past sixteen or eighteen years has more than a very small percentage of women's shoes been made as heavy, or substantially as heavy, as Plaintiff's Exhibit 282. Will you kindly state to the court what experience you have had during the last sixteen or eighteen years to qualify you to testify with reference to what kind of shoes women have used during that period?

Ans. Practically all my experience during that period qualifies me to express that opinion.

*Cross-Int.* 693. Have you sold shoes at wholesale or retail?

Ans. No, sir.

*Cross-Int.* 694. Do you know what kind of shoes women who are employed on farms wear?

*Ans.* Generally speaking, I think I do.

*Cross-Int.* 695. Do you say they do not wear a shoe as heavy as Plaintiff's Exhibit 282?

*Ans.* Probably no woman employed on a farm ever wears a welt shoe, except possibly a dress shoe.

*Cross-Int.* 696. I am not asking for probabilities; I am asking for what you absolutely know about it. I apprehend the court is desirous of getting at the facts from someone who has actual knowledge of the facts. Do you say you know of your own knowledge what character of shoe is generally worn by women employed in and about farms throughout the United States?

*Ans.* I think I may say that I know that women employed as servants on farms usually wear cheaper shoes than welt shoes.

*Cross-Int.* 697. Now, will you give the court the benefit of your experience, stating how you get the information?

*Ans.* It is common trade knowledge.

*Cross-Int.* 698. And are you engaged, or have you been engaged, in the sale of shoes?

*Ans.* No, sir.

*Cross-Int.* 699. Do you know what kind of shoes the women wear out in the hop picking regions?

*Ans.* I know that the shoes which are manufactured for women engaged in employments of that character are not welt shoes.

*Cross-Int.* 700. Then you have no personal knowledge, have you, as to what the women do wear in the hop picking regions?

*Ans.* I never observed the shoes worn by women engaged in hop picking.

*Cross-Int.* 701. Have you any knowledge of the kind of shoe largely worn by the women of northern Vermont and New Hampshire?

*Ans.* The kind of shoes worn by women in that part of the country, as in other parts of the country, depends largely upon the condition of their purses.

*Cross-Int.* 702. Then, do you tell the Court that, from your knowledge and experience, none but women who can afford to have several pairs of shoes wear shoes like Plaintiff's Exhibit No. 282?

*Ans.* Yes, sir; as a general rule that is correct.

*Cross-Int.* 703. And you make that statement founded on your experience as set out in the record; is that correct?

*Ans.* Yes, sir; that statement is based upon my experience and upon information which may be characterized as trade knowledge.

*Cross-Int.* 704. Now, Mr. Howard, is it not a fact that there are very many shoes for women that are fully as heavy, and made of as heavy material, as very many light-weight shoes made for and used by men?

Mr. PHILLIPS. Question objected to as outside the order of the court.

*Ans.* Yes, sir; it is a fact that many welt shoes of the character of Plaintiff's Exhibit No. 282, which is to all intents and purposes a man's shoe, are made each year; but, as I have previously testified, the number is relatively few as compared with the number of women's welt shoes which are made each year.

*Cross-Int.* 705. Now, do you say that Plaintiff's Exhibit 282 is a shoe for men or a shoe for women?

*Ans.* The shoe of Plaintiff's Exhibit 282, which, as I have previously testified, is a woman's "mannish shoe", was undoubtedly meant for women's wear, as the parts of the upper are shaped on the lines of a woman's shoe.

Mr. WEBSTER. In view of the attitude of the witness in declining to answer the questions without incorporating in his answer matter which seems evasive, to which the attention of the Court is respectfully called, counsel for plaintiff will not proceed further with the cross-examination.

The WITNESS. If counsel for the United States will kindly point out any interrogatory which has not been satisfactorily answered, I will endeavor to correct any errors which I have made as indicated by the interrogatory.

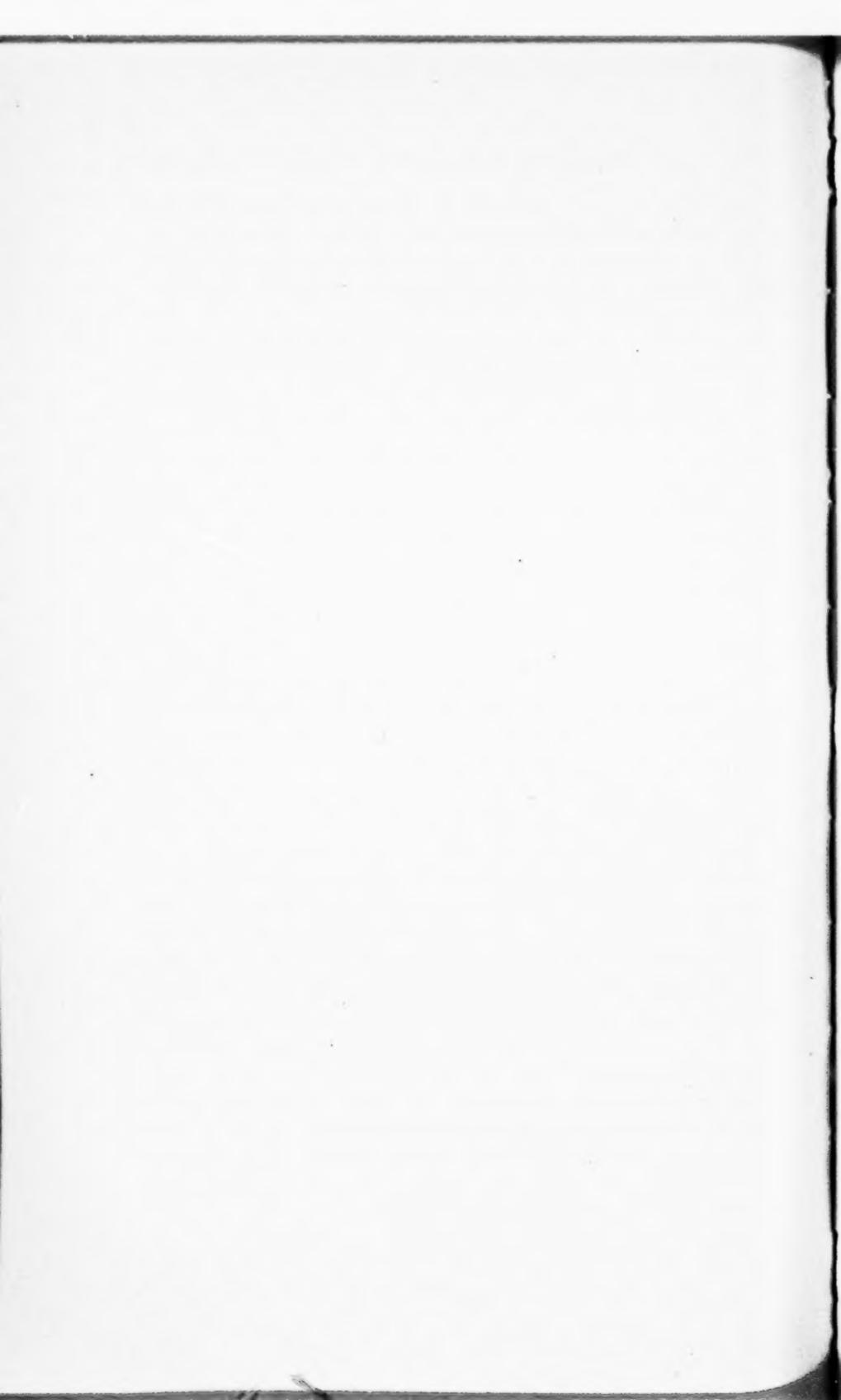
Mr. WEBSTER. The attention of the witness is called to the various questions which might have been answered by yes or no, and which, in fact, have been answered by matter in the nature of argument and evasion rather than by a direct answer to the question.

Mr. PHILLIPS. The attention of the Court is called to the fact that the record does not substantiate any such statement on the part of counsel for the plaintiff. So far as at present advised, there will be no further redirect examination of this witness.

NELSON W. HOWARD.

Attest: CHARLES K. DARLING, *Special Examiner.*

[*Adjourned to 2 p. m., Thursday, March 5, 1914.*]



ADDITIONAL EVIDENCE FOR THE UNITED STATES.

TAKEN PURSUANT TO ORDER OF COURT, ENTERED FEBRUARY  
10, 1914, BEFORE ME,

CHARLES K. DARLING,

*Special Examiner.*

BOSTON, MASS., March 5, 1914.

Present:

ALLEN WEBSTER, Esq., *Special Assistant to the Attorney General*,  
WILLIAM S. GREGG, Esq., *Assistant to the Attorney General*,  
*of Counsel for Complainant*;  
FREDERICK P. FISH, Esq., and BENJAMIN PHILLIPS, Esq.,  
*of Counsel for Defendants.*

SECOND DEPOSITION OF CHARLES McCORMICK CHAPMAN.

*Direct Examination by ALLEN WEBSTER, Esq., of Counsel for  
THE UNITED STATES.*

*Int.* 19. Are you the same Charles McCormick Chapman who has heretofore testified for the complainant in this cause?

*Ans.* I am.

*Int.* 20. Mr Howard has testified that a loading and attaching machine, designated by him as "Model B, McKay Automatic Heel", as manufactured by the United Shoe Machinery Company, in his opinion, infringed claims 10 and 11 of patent No. 958,282, May 17, 1910, Plant. Kindly state whether you have had pointed out to you the machine referred to by Mr. Howard, and by whom pointed out, and whether you have examined the same in connection with said claims of said patent, and whether you find in such machine the mechanism defined and referred to in said claims.

*Ans.* I saw the machine referred to in the question at the general office of the United Shoe Machinery Company, 89 Beach Street, the machine having been shown me by Mr. Warren of that company. I made a comparison of claims 10 and 11 of the patent to

Plant No. 958,282, May 17, 1910, with the said machine, and in my opinion said claims 10 and 11 are not infringed by said machine. My opinion is based upon the fact that claim 10, among other elements, calls for "nail driving devices sustained by the cross-head", this element not being found in said machine.

As to claim 11, the element "nail drivers carried by the cross-head" is not found in said machine. Because of these two differences set up in the two claims respectively, I cannot see upon what the allegation of infringement is based.

*Int. 21.* Mr. Howard has testified that a certain nailing machine, designated by him as "American Lightning", in his opinion infringed claims 15 and 16 of patent to Plant No. 958,302, dated May 17, 1910. Kindly state whether this machine has been pointed out to you, whether you have examined the same and compared the mechanism with said claims 15 and 16, and whether you find the mechanism of said claims incorporated in said machine.

*Aus.* I examined the said machine referred to, which has thereon number 3070, at the same place, the same having been shown me by Mr. Warren, and made a comparison of the same, with claims 15 and 16 of the said patent to Plant No. 958,302, May 17, 1910. In my opinion, claims 15 and 16 of said patent are not infringed by said machine, for the following reasons:—

Claim 15 includes as an element "and a support adjacent to path and movement of said devices", which I could not find in said machines. Furthermore there is a limitation included within the clause of claim 15, "said moving parts and support having, one, a slot parallel with the apertures in said block", which limitation I was unable to find in the machine.

As to claim 16, I was unable to find in the combination of said machine "devices for operating on a heel", coupled with the further clause or element of the claim "of means for guiding said devices and apertures into alignment".

In the matter of the two above quotations the machine referred to is clearly not covered by the said claim 16 of the patent.

*Int. 22.* Mr. Howard has testified with reference to indenting and burnishing machine designated by him as Goodyear welt, and

that the work-supporting mechanism of that machine, in his opinion, infringed claims 1, 2 and 6 of the Plant patent to Heys No. 860, 377, dated July 16, 1907. Please state whether that machine has been pointed out to you, and by whom, whether you have examined the same, have compared the mechanism with the claims in question, and what you have to say with reference to the mechanisms being the same as those referred to in the claims.

*Ans.* Mr. Warren showed me the machine referred to at the same place as stated by me, and I made a comparison of the structure of the same with claims 1, 2 and 6 of the said patent to Heys No. 860,377, July 16, 1907. In each of claims 1 and 2 there is a limitation in the matter of an element, "means also to tip it", this referring to the work table upon which the work is supported and in connection with which the work is fed or moved. The machine lacking this particular element of the two claims is clearly not an infringement of said claims.

With reference to claim 6 I failed to find the "means to tip it", referring to the work support, and also the element "a worm and worm wheel connections geared to rotate said table in any of its positions". Lacking these two statements of means, or rather lacking in elements answering to such statements, the claim is not infringed by said machine.

*Int.* 23. Mr. Howard has testified with reference to pulling-over machine, designated by him as "model B Rex", and has testified that the United Company were anxious to put out a pulling-over machine having a tip-measuring device, and that the United Company could not put out such a machine containing such device because it would infringe claim 55 of Plant patent to Heys No. 957,955, dated May 19, 1910. Kindly state whether one of the United Company's pulling-over machines was pointed out to you by anyone, and by whom, which contained in its make-up a tip-measuring device, and state whether such mechanism is that that is referred to and specified in claim 55 of the patent in question.

*Ans.* Mr. Warren showed me a machine allegedly the one infringing the said patent to Heys No. 957,955, May 17, 1910, in the matter of said claim 55. I compared the said claim with the

said machine and found the latter lacking in the element of the claim "and a gaging device movable into and out of operative position and co-operating with the pulling-over means to properly position the upper of the shoe".

In the machine referred to, and which I examined, there is a device which is capable of being thrown over into engagement with the shoe under-hand manipulation. There is, however, no co-operation of said device with the pulling-over means as called for by the said claim 55 of the patent. Therefore, it is my opinion that the claim is not infringed by such machine.

*Int. 24.* Mr. Howard has testified with reference to wheeling machine, designated by him as "No. 2, Goodyear Impression Stitch", and that the machine in question as manufactured by the United Company infringed, in his opinion, claims 2 and 5 of patent No. 784,263, dated March 7, 1905, issued to Heys, and which patent was the property of the Bresnahan Shoe Machinery Company. Kindly state whether the machine referred to was pointed out to you by anyone, whether you examined the same and compared the mechanism with the mechanism defined and referred to in the claims in question, and what you have to say with reference to the same.

*Ans.* The machine was shown me by Mr. Warren at the same place, and I noted thereon a name plate indicating Booth Brothers, with the number 986. I made a comparison of the claims 2 and 5 of the Heys patent No. 784,263, March 7, 1905, with the structure of said machine, and reached the conclusion, as the result of my comparison, that claims 2 and 5 of the patent are not infringed by said machine. My reason for this opinion is that the machine is lacking in the elements of claim 2, as follows: "Movable means for supporting the tool", in combination with "mechanism for automatically moving said supporting means to inactive position and operating said clutch to effect a cessation of rotation of the heel".

As to claim 5, the machine lacks the element "a movable head therefor", referring to the movable head of the patent for supporting the rotary tool. The machine also lacks the element of claim 5, "means for simultaneously unclutching the clutch mechan-

ism from the shaft to stop the rotation of said tool and moving the said head toward inoperative position".

*Int.* 25. Mr. Howard has testified with reference to lockstitch machine designated by him as "Model K, Goodyear Outsole Rapid", but states that that machine as put out by the United Company in 1910, in his opinion, in so far as the fudge-stitch mechanism was concerned, infringed claims 1, 2, 4, 5 and 9 of patent to Plant No. 940,723, dated November 23, 1909, and infringed claims 9 and 10 of patent to Plant No. 940,725, dated November 23, 1909. Will you kindly state whether the machine in question was pointed out to you by anyone, whether you examined the same and whether the mechanisms defined and referred to in said claims were found by you in the machine in question.

*Aus.* Mr. Warren showed me a machine at the same place, which he stated was lockstitch machine, model M, and on which I found the number 927 and in connection with which he alleged that all the structure allegedly infringing said two patents of the question would be found in said machine. I made a comparison of claims 1, 2, 4, 5 and 9 of patent to Plant No. 940,723, November 23, 1909, with said machine and found that the latter contained apparently all the elements called for by said claims in substantially the relation noted, and apparently for the same purpose or purposes.

It should be noted in this connection, however, that in each of the claims there is a clause, which is substantially the closing clause of each claim above referred to, calling for the movement of the slitting device to initial position to cause the said device to slit the work, this being on the return movement of the said device. From my knowledge of the art, this would seem to be the distinguishing element, if such it may be called, lending alleged patentability or patentable novelty to each of the claims. The said clause in each of the claims having reference to a mere mode of operation or particular timing of a device whereby to bring about the slitting of the work is, in my opinion, a trivial limitation and hardly important enough to impart patentable novelty to the several claims of the patent under discussion, in view of the prior art.

Regarding patent to Plant No. 940,725, November 23, 1909, I

found substantially the same condition with reference to claims 9 and 10 when compared with the structure of the said machine, and also the same condition with reference to the limitation of said claims wherein the material or work is slit or cut on return movement of the slitting knife.

Mr. PHILLIPS. All portions of the answer relating to the prior art are objected to as outside the order of the court, incompetent, irrelevant and immaterial.

[*Adjourned to 10 a. m. Friday, March 6, 1914.*]

BOSTON, MASS., March 6, 1914.

Mr. WEBSTER. The witness is submitted to opposing counsel for cross-examination, counsel for the complainant reserving the right to call the witness again with reference to matters not gone into in this examination, and counsel states that if the witness is again called the examination with reference to such other matters will be very brief.

*Cross Examination by BENJAMIN PHILLIPS, Esq., of Counsel for Defendants.*

—*Cross-Int.* 26. Did you ever see the loading and attaching machine designated as "Model B, McKay Automatic Heel", in regard to which you testified, in operation?

*Ans.* If you have reference to the machine in connection with which I examined the patent to Plant No. 958,282, my answer is in the negative, with the further statement that it was not necessary to see it in operation for the purposes of claims 10 and 11 of the said patent, which I examined.

—*Cross-Int.* 27. Will you try to confine your answers to matter responsive to my interrogatories during the rest of your examination?

*Ans.* I will, to the extent that such questions as you may ask will not, if answered categorically, compel me to qualify in order that my answers may be properly understood.

—*Cross-Int.* 28. Will you please describe what you understand to be the "cross-head" in loading and attaching machine, model B, McKay automatic heel?

*Ans.* In the machine referred to there are two parts sliding relatively to each other, one part having sleeves at opposite ends working on rods at opposite ends of the other parts. One of these parts I took to be the cross-head since it was nearly like, and answered more nearly to, the element 5 of the Plant patent No. 958,282.

*Cross-Int.* 29. Did you consider that the part which carried the nail block was the cross-head of the machine referred to?

*Ans.* What element do you call the "nail block" in that machine?

*Cross-Int.* 30. The element which contains the apertures in which the nails are inserted and which the drivers enter to drive the nails.

*Ans.* I did.

*Cross-Int.* 31. Would you say that the uprights secured to each side of the part which carries the nail block were parts of the cross-head?

*Ans.* My recollection is that they are.

*Cross-Int.* 32. To what is the bottom of those uprights secured?

*Ans.* In the machine I examined, a heavy piece of casting extending transversely of the machine.

*Cross-Int.* 33. Would you say that the heavy piece of casting was part of the cross-head?

*Ans.* Not necessarily part of the cross-head, but a part of the cross-head frame.

*Cross-Int.* 34. Then you make a distinction between the cross-head and the cross-head frame?

*Ans.* Yes; because the cross-head must be carried by something.

*Cross-Int.* 35. Isn't it true that the part which carries the nail block is a heavy casting connecting the upper ends of the vertical rods to which you have referred?

*Ans.* According to my recollection, yes.

*Cross-Int.* 36. Isn't it further true that the lower heavy casting and the upper heavy casting are both actuated by the toggle at the sides of the machine to cause the compression of the heel?

*Ans.* Just at this moment I do not recall whether the toggle

mechanism in that machine actuated the cross-head or whether it actuated the nail drivers.

*Cross-Int.* 37. Was there more than one toggle mechanism in the machine, according to your vivid recollection?

*Ans.* There is another mechanism for actuating the other part to which I have referred, and I do not recall whether it was toggle mechanism or not.

*Cross-Int.* 38. In the machine which you examined did the nail-driving devices have a movement independent of the cross-head movement?

*Ans.* Yes.

*Cross-Int.* 39. By what instrumentality was that movement caused?

*Ans.* Either the toggle mechanism referred to by you or the other mechanism referred to by me.

*Cross-Int.* 40. As a matter of fact were not there two toggle mechanisms, one actuating the cross-head and the other the nail-driving device?

*Ans.* I have just stated my best recollection of the matters to which you referred.

*Cross-Int.* 41. You do not know then upon what the nail-driving device rested when in its lowermost position, do you?

*Ans.* No.

*Cross-Int.* 42. Do you know how the nail-driving mechanism was raised in so far as in its upward movement it moved with the cross-head?

*Ans.* No, for I did not see the machine in operation.

*Cross-Int.* 43. You have stated that you examined a certain nailing machine known as the American Lightning, and have compared the same with the mechanism set forth in claims 15 and 16 of patent to Plant No. 958,302. Will you examine the patent to Pope No. 1,072,986, September 9, 1913, which patent is one of the patents included in Defendants' Exhibit No. 164, and state whether or not that patent illustrates in the drawings and describes in the specification any features of the American Lightning machine examined by you?

Mr. WEBSTER. Question objected to for that it does not relate to the patent inquired about in direct examination, and for the further reason that the patent now inquired about was issued after the filing of the bill herein, and any evidence in reference thereto is therefore incompetent, inadmissible and irrelevant.

Mr. PHILLIPS. Counsel for defendants desires to state that this patent is shown to the witness for the purpose of identifying the structure in regard to which he has claimed to testify in his direct examination.

Mr. WEBSTER. Counsel for the complainant replies that counsel can hardly expect the witness to identify the structure of a machine and compare the same with such machine unless he has the machine before him at the time of examining the illustration as requested.

*Ans.* Without reading the specification of this patent, and upon merely cursory inspection of the drawings, I will state that in some respects the Figures 1 and 2 of said patent resemble the structure of the machine referred to in the question. That is to say, the machine examined by me and referred to in the question (if they are the same) is provided with a sliding nail driver supported upon and sliding relatively to a vertically reciprocating member or cross-head. In the rear of the cross-head of the machine I examined there is a depending spindle similar to the one indicated by "32", Fig. 1 of the patent to Pope, of the question, on which slides a lug indicated by "30" in said patent carried by the sliding nail driver. In the machine I examined, as well as in the patent to Pope of the question, the nail drivers are inclined to the vertical toward the rear of the machine and in the bed below through which the nail drivers work are a series of apertures similar to those indicated at "13" in the patent to Pope in which the nail drivers operate and which are correspondingly inclined. If the above does not satisfy the question, I will take the time to read the specification and amplify my answer.

*Cross-Int.* 44. Assuming the parts of the machine which you examined to be in a position such as is indicated in Fig. 1 of the drawings of the Pope patent which I just showed you, are the

drivers in or out of alignment with the apertures which you state were similar to the apertures 13 disclosed in the patent?

*Ans.* Presumably in alignment.

*Cross-Int.* 45. Will you examine the drawings a little more carefully and see if you do not desire to correct your answer?

*Ans.* I qualified my answer by saying "presumably in alignment", the reason for which is that the view or figure is a perspective, in consequence of which it is impossible to state that the drivers are actually in alignment with the respective apertures with which they co-operate.

*Cross-Int.* 46. If the drivers maintain the positions in which they are shown in said Fig. 1, I mean their lateral position with reference to the cross-head, and were moved down vertically without any lateral movement, would they register with the apertures when they came in contact with the nail block?

*Ans.* Under your question, obviously if the drivers came in contact with the nail block they could not register with the apertures.

*Cross-Int.* 47. If they were moved in vertical lines from the positions which they now occupy in Fig. 1 of the Pope patent, would such movement bring the nail drivers into engagement with the apertures in the nail block?

*Ans.* For the reason stated in the previous answer, compelling the qualification I made, it is impossible to answer that question in either the affirmative or the negative, owing to the fact that the view is a perspective view.

*Cross-Int.* 48. Didn't you observe the machine with sufficient care to answer such question with regard to the machine?

*Ans.* I have understood all your questions to refer to the patent to Pope, and not the machine I examined.

*Cross-Int.* 49. You have evidently misunderstood my questions. Referring now to the machine which you examined, and assuming that the nail drivers were in their raised positions, would a vertical movement of such drivers in a straight line cause them to engage the apertures in the nail block?

*Ans.* As an actual fact, under the impelling power imposed upon the machine by Mr. Warren, the nail drivers did actually descend

and enter the apertures in the bed of the machine, said apertures being similar to those indicated by "13" of the patent to Pope.

*Cross-Int.* 50. Did you observe the machine with sufficient care to be able to state by what mechanism the result which you have just stated was accomplished?

*Ans.* My recollection is that in the machine the nail drivers were maintained in a given position during the entire descent of the cross-head until the lug at the rear of the driver carrier parted from the vertical spindle. At that time the nail drivers were all in register with the apertures in the bed and descended into the respective apertures in said bed.

*Cross-Int.* 51. That is to say, the machine was provided with means arranged to lose control of the moving parts after the nail drivers and apertures had become engaged?

*Ans.* Your expression "lose control of the moving parts" is a little broad, but if you intend to confine that expression to the driver carrier, the lug, the spindle and the bed with the apertures, my answer is in the affirmative.

*Cross-Int.* 52. Will you kindly read upon the record that portion of the Pope specification commencing with line 107 on page 1 and ending with the end of the sentence in line 8 on page 2?

*Ans.* It is as follows:—

"To this end another feature of the invention consists in providing guiding means for controlling the position of the driver block and drivers upon the head when it is moved sufficiently from the work pressing members to carry the ends of the drivers out of the passages, said means being arranged to release the driver block and leave the drivers free to follow the path of the passages when the head is again moved sufficiently to enter the ends of the drivers in the passages."

*Cross-Int.* 53. The specification of the Pope patent further states at the bottom of the first claim on page 2, line 65: "suitable means are provided for guiding the drivers in a vertical path while they move towards or from the driver passages in order that the ends of the drivers may be properly located to enter the ends of the driver passages when the cross-head moves downwardly". Please

state whether or not you found in the machine which you examined the means referred to in the statement which I just read you.

*Ans.* Yes.

*Cross-Int.* 54. Now, assuming that the drivers have the vertical movement referred to when they are in their raised or most elevated position, are they in alignment or out of alignment with the apertures?

*Ans.* I should say they are in alignment with the apertures, unless some element in the machine has shifted the base in which the apertures similar to 13 are located.

*Cross-Int.* 55. Would you say that the two pencils which I now show you were in alignment?

*Ans.* In accordance with the question, you are holding two pencils inclined to the vertical, end to end, and supposedly in identically the same inclined plane. My answer is yes.

*Cross-Int.* 56. Now, assuming that I raise the point of one of these pencils vertically, would you say that the pencils were still in alignment?

*Ans.* Under the question you have shifted the pencils into parallelism.

*Cross-Int.* 57. Would you say they were in alignment?

*Ans.* No; not if they are in parallelism.

*Cross-Int.* 58. Now, is not that precisely what occurs in the case of the drivers and the apertures through which the drivers pass in the machine which you examined?

*Ans.* It may be so, and it may not be so. My recollection is that the head carrying the drivers or the plate carrying the drivers similar to the one with the lug 30 thereon in the Pope patent, while capable of movement relatively to the bed, with the apertures 13 therein in the Pope patent did not move relatively to said bed.

*Cross-Int.* 59. Isn't it true that the lower ends of the drivers were moved in a vertical line from the upper end of the apertures in the upward movement of the cross-head?

*Ans.* Yes.

*Cross-Int.* 60. How could that be done without moving the aper-

tures and drivers out of alignment, assuming that the nail block remained stationary?

*Ans.* In the first place, the entire movement, as I observed it in the machine under discussion, of the driver and its head was vertical, and no change whatever took place between the relation of the drivers and the apertures in the bed under the vertical movement.

*Cross-Int.* 61. Isn't it true that the lower ends of the drivers moved upward in a vertical line after they were disengaged from the apertures?

*Ans.* Yes.

*Cross-Int.* 62. How could that movement take place without throwing the drivers and apertures out of alignment?

*Ans.* By maintaining the same relation between the drivers and the bed with the apertures therein; that is, by avoiding any shift laterally of either of the parts.

*Cross-Int.* 63. Could the points or lower ends of the driver move in that way and avoid a lateral movement of the drivers with reference to the apertures?

*Ans.* Yes; provided the guiding devices were maintained in co-operative relation until the pins or drivers were caused to register with the apertures.

*Cross-Int.* 64. You do not dispute, do you, that the lower ends of the drivers during the upward movement of the cross-head move in vertical lines?

*Ans.* No.

*Cross-Int.* 65. It is true, then, is it not, that every point on every driver moves along a vertical line?

*Ans.* Yes.

*Cross-Int.* 66. If that is true, how can such vertical movement be accomplished without throwing the drivers and the apertures out of alignment?

*Ans.* The points of the drivers might move through a myriad of different planes and yet maintain the aligned relation of the pins with the apertures in the bed, under the proper operation of the machine.

*Cross-Int.* 67. I will put my question a little differently. It is true, is it not, that if the drivers were in alignment with the apertures when the cross-head was in its raised position, that a movement of the drivers in the direction of their longitudinal axis would cause them to register with and pass through the apertures?

*Ans.* Of course the question is purely suppositional, but if I understand the meaning of it my answer is in the affirmative. I can see, however, that counsel and I have been working at cross purposes in connection with the machine and the structure thereof in question, and in order to place counsel on the same plane with me in the matter of my answers I will suggest the following: at times the questions have referred to the points of the drivers with reference to the apertures; at times with reference to the entire length of each driver or considering the drivers as a whole and not merely their points, and at times with reference to the alignment of the drivers and the apertures, the latter may be, or may be not, being considered in their entirety.

Now, with reference to these differences, and as I have caught the meaning of the questions, I will state that both in the machine I examined as well as the patent it is quite obvious that when the driver carrier is raised so that the guiding devices co-operate to control the carrier, the drivers are bodily moved in a vertical plane, and throughout their length are not in alignment obviously with the entire length of the apertures, considered as passages through the base. The drivers, however, in any position which they might assume with reference to the base, are necessarily in alignment with the apertures considered merely as holes at or around the surface of the base. Possibly that explanation will place counsel and the witness on the same basis of understanding.

*Cross-Int.* 68. In view of your present understanding, just what is meant, according to your interpretation, in claim 15 where it is stated that "one, a slot parallel with the apertures in the block"? I am referring to patent to Plant No. 958,302.

*Ans.* The apertures referred to in the matter quoted from claim 15 of said Plant patent means the entire passage or passages such as are indicated by "13" in the base of the Pope patent, the pas-

sages being of considerable length. This is also true in the machine I examined, that is, the apertures are of considerable length, and are passages into which the drivers pass and in which they operate. The slot referred to in claim 15 of the patent to Plant is the slot "104", shown clearly in each of Figures 13 and 14 of the Plant patent, sheet 10 of the drawings. In the Plant patent referred to the slot "104" in the upright of the member "52" which co-operates with the pin apparently carrying an anti-frictional roller "106" is parallel with the passages or apertures in which the drivers and cutters or punches operate, the said passages or apertures being in the member "44" in the same figures of the Plant patent. The corresponding passages or apertures in the Pope patent are inclined to the vertical and are consequently at an angle, not only to the passage or aperture in the lug "30" but also to the pin "32", which co-operates with said lug.

*Cross-Int.* 69. Do you give the word "apertures" as used in claim 16 of the same Plant patent No. 958,302 a different meaning?

*Ans.* No.

*Cross-Int.* 70. What element was it which, in your opinion, was included in the description of claim 16 which is not found in the machine which you examined? I am referring to the nailing machine, American Lightning.

*Ans.* The element included within the expression "with devices for operating on a heel", coupled with the element included within the clause "of means for guiding said devices and apertures into alignment".

*Cross-Int.* 71. Wouldn't you call the drivers in the American Lightning machine devices for operating on a heel?

*Ans.* Yes; but not within the terms of this claim of the Plant patent, that is, claim 16.

*Cross-Int.* 72. Isn't it true that the Plant specification refers both to awls and drivers?

*Ans.* Yes; and the said sixteenth claim includes them both.

*Cross-Int.* 73. Under what expression?

*Ans.* In the expression "with devices for operating on a heel".

*Cross-Int.* 74. In the Plant machine does the guiding means,

that is, the slot and the roll, act in connection with more than one set of devices at a time?

*Ans.* No.

*Cross-Int.* 75. And when one set of devices is in operation the other is absolutely inoperative?

*Ans.* Not inoperative, but out of operative position.

*Cross-Int.* 76. It is performing no operation?

*Ans.* Correct, as just stated.

*Cross-Int.* 77. And in so far as the action of the slot and roll is concerned when operating in connection with the drivers, in so far as its operation is concerned the awls might as well be off the machine?

*Ans.* Why, no; certainly not. You are assuming an inoperative machine in contradistinction to an operative machine including devices which are at all times capable of operation and performing a function when brought into the proper relation with other devices in the machine.

*Cross-Int.* 78. What effect, if any, upon the operation of a slot and roll in the machine of the Plant patent, when acting as a guide for the nailing devices, does the existence of the puncturing awl on a machine have?

*Ans.* None.

*Cross-Int.* 79. It is true, is it not, in the Plant machine that the slot which acts as a guiding slot is a vertical slot?

*Ans.* I assume you refer to the slot "104" in Figures 13 and 14. My answer, therefore, is yes.

*Cross-Int.* 80. It is true, is it not, they are parallel to the apertures simply because the apertures are vertical?

*Ans.* That may be a condition, but I could not say that it is "simply because", since, as I understand the Plant machine and the idea of invention thereof, the arrangement of the apertures or passages for the drivers and awls parallel with the slot "104" was intentional and not merely because.

*Cross-Int.* 81. Isn't it true in the Plant machine that when the drivers have registered and engaged with the apertures in the nail block the roll "106" passes out of the slot "104", so that the

motion of the drivers is no longer controlled by the slot, and it is absolutely immaterial whether the slot is parallel with the drivers or not, provided it is suitably shaped and in a suitable position on the machine to guide the drivers into engagement with the apertures?

*Ans.* The condition suggested by the question is undoubtedly true. The supposition of the question being merely a reference more to the idea of the inventor, I cannot answer.

*Cross-Int.* 82. Isn't it true that both the vertical slot "104" in the Plant machine and the vertical rod in the nailing machine, American Lightning, act to guide the drivers in their downward movement and to cause them to engage the apertures in the nailing block?

*Ans.* Yes

*Cross-Int.* 83. Isn't it true of both devices that when the drivers are thus engaged they are released from the guiding devices and left to move free from the control thereof?

*Ans.* Yes.

*Cross-Int.* 84. Isn't it true that the vertical pin which is referred at "32" in Pope patent No. 1,072,986 is adjacent to the path of movement of the drivers?

*Ans.* Oh, yes; it may be so considered.

*Cross-Int.* 85. Referring now to wheeling machine No. 2, Good-year impression stitch, with regard to which you have testified, did you examine that machine with sufficient care to be able to state whether or not it comprised a rotary tool?

*Ans.* Yes; I found it to contain a rotary tool.

*Cross-Int.* 86. Did the machine last referred to, as far as you are able to state, also comprise a shaft connected with the rotary tool and having a clutch mechanism thereon?

*Ans.* I think so.

*Cross-Int.* 87. Is it not further true that said machine comprises means for relatively moving the tool and the work support so that the tool is out of operative engagement with the work?

*Ans.* Not precisely as stated by the question. I found in the machine a work support which could be depressed relatively to the

operative position of the tool. The result of that condition in the machine is that when the work support is depressed relatively to the tool the work may be taken away from the action of the tool. You will note that this is not precisely in the language of the question, the latter stating it in such a way that I was compelled to qualify.

*Cross-Int.* 88. Is it not true that when the work support has been depressed to permit removal of the work, as you have stated, that the tool is out of operative engagement with the work?

*Ans.* Not necessarily; you may depress the work support and still hold the work in engagement with the tool.

*Cross-Int.* 89. But it is true, is it not, that if the work continued to rest upon the work support, the work support may be depressed so that the tool is out of working engagement with the work?

*Ans.* It is.

*Cross-Int.* 90. Isn't it also true that in the machine of the Heys patent No. 784,263, if the operator continues to hold the work against the tool when the tool is raised, it will not be out of working engagement with the work?

*Ans.* Yes, and no. Physically the shoe would be in engagement with the tool when the latter is elevated. Considering it from an operative or operating standpoint, when the tool is lifted it goes out of action, since the clutch mechanism is thrown out of action. Hence we may consider the shoe as not in operative engagement with the tool.

*Cross-Int.* 91. Isn't it true of wheeling machine No. 2, Goodyear impression stich, that it comprises means for simultaneously unclutching the clutch mechanism of the shaft to stop the rotation of the tool and relatively move the tool and work support so that the tool is out of operative engagement with the work?

*Ans.* I would say may be out of engagement with the work, and with the qualification of my foregoing answer, my answer to the last question is yes.

*Cross-Int.* 92. Your theory is, as I understand it, in wheeling machine No. 2, Goodyear impression stich, the work might be held by the operator against the tool after the work support had

been depressed. Isn't it true, however, that the tool at this time would not be in rotation, so that while there might be physical contact between the work and tool, the tool could not be said to be in operative engagement with the work?

*Ans.* Correct.

*Cross-Int.* 93. Referring now to indenting and burnishing machine, Goodyear welt, did you examine that machine with sufficient care to state whether or not it comprised a tool for acting upon the sole of a shoe?

*Ans.* Yes; I did.

*Cross-Int.* 94. Did it?

*Ans.* It did.

*Cross-Int.* 95. Did it also comprise a work table for supporting and moving the work?

*Ans.* Yes.

*Cross-Int.* 96. Did it also comprise worm and worm wheel connections geared to and to rotate said table in any of its positions?

*Ans.* No.

*Cross-Int.* 97. What mechanism referred to in my last question did it lack?

*Ans.* All the mechanism stated by the question.

*Cross-Int.* 98. That is, you mean the gear and the gear wheel connection?

*Ans.* No; I mean the worm and worm wheel connection as stated by your question.

*Cross-Int.* 99. Are you sure that you examined the machine with sufficient care to answer that question?

*Ans.* I think so.

*Cross-Int.* 100. And you feel as positive in this matter as you do with regard to your other statements which you have made as to machines which you examined?

*Ans.* Yes.

*Cross-Int.* 101. Will you please describe the mechanism by means of which the table was rotated?

*Ans.* Ordinary driving gear; that is, a gear wheel arranged in a horizontal plane with its teeth in a vertical plane, co-operating with

a gear on the table or support arranged at an inclination to the first named gear; this in contradistinction to the mechanism referred to in your question, viz., worm and worm wheel connection, etc.

*Cross-Int.* 102. Isn't it true that in the machine of the Heys patent the table is rotated by means of a bevel gear, arranged in substantially horizontal position, which meshes with another bevel gear arranged in a vertical position, which in turn meshes with a bevel gear on the lower portion of the work table?

**Mr. WEBSTER.** Objected to for that it calls for matter foreign to the direct examination.

**Mr. PHILLIPS.** Counsel for defendants calls attention to the fact that this witness has assumed to understand a machine of the Heys patent No. 860,377 sufficiently to express an opinion on the question of infringement of certain of its claims.

**Mr. WEBSTER.** The attention of the Court is respectfully called to the fact that the question here at issue is with reference to a comparison of certain claims with a certain machine and not with reference to the whole Heys patent.

**Mr. PHILLIPS.** It is evident from this expert's testimony that he seems to have considered the claim without reference to the patent, if that is what is meant by my brother Webster.

*Ans.* Yes, that is true; but I direct attention to the fact that the teeth of the several gears vary in depth.

*Cross-Int.* 103. Which one of those gears would you call a worm?

*Ans.* Neither of them.

*Cross-Int.* 104. Isn't it true that means are provided in the indenting and burnishing machine, Goodyear welt, whereby it is possible to tip the table into any desired angular or oblique position at any level without in any manner disturbing the driving connections to rotate it?

*Ans.* The machine I examined has co-operating parts such that the table may be tilted to any desired position, within limits, relatively to the rotary tool, but such means of co-operating parts are what may be called "set" means; that is, a bolt in one part working through a slot in another, the bolt being capable of being loos-

ened and tightened for the purpose of shifting the table. This, however, is not the means referred to in claims 1, 2 and 6 of the Heys patent No. 860,377, and embraced within the terms "means also to tip it", claim 1, "means to tip it", claim 2, and a similar clause in claim 6.

Mr. PHILLIPS. Answer objected to as utterly irresponsible after the words "This, however, is not the means referred to".

*Cross-Int.* 105. Isn't it true that the machine of the Heys patent is provided with what you have chosen to term "set" means for tilting the table into any desired position, within limits?

Mr. WEBSTER. Objected to for that the inquiry goes to the machine of the Heys patent, while the direct examination went only to a comparison of claims 1, 2 and 6 of that patent with the machine examined by the witness.

*Ans.* Yes, and also with the other means referred to in the several claims above referred to in the clauses quoted by me therefrom.

*Cross-Int.* 106. The means to which you have referred in your last answer, aside from what you have termed the "set" means, for adjusting the angularity of the table, are the treadle and connections between the treadle and the table which simultaneously change its elevation and the pitch of the table, are they?

*Ans.* Yes, and includin the set means.

*Cross-Int.* 107. Means to which I referred in my last question are the means stated in claim 2 of the Heys patent No. 860,377, are they?

*Ans.* Yes; as I understand it, it is the mechanism or devices by means of which the table may be tilted relatively to the tool at the same time that it is elevated or depressed relatively to the tool.

*Cross-Int.* 108. For the information of the Court will you kindly read claim 2 upon the record?

*Ans.* It is as follows:—

"[2] In a machine of the class described, the combination with a working tool, of a work table for moving the work with relation to said table and the tool, means to raise and lower the table, means to tip it, and means to rotate it in any elevated or tipped position."

*Cross-Int.* 109. Will you kindly read upon the record claim 3 of the Heys patent?

Mr. WEBSTER. Objected to for that claim 3, or the structure referred to therein, is not involved in this inquiry and no reference was made to the same on direct examination.

*Ans.* It is as follows:—

"[3] In a machine of the class described, the combination with a working tool for acting upon the sole of a shoe, of a work table for supporting the work for the action of said tool, a treadle and connections between said treadle and table for simultaneously changing the elevation and pitch of the table."

*Cross-Int.* 110. Do you find in either claim 1 or claim 2 any express limitation as to any simultaneous change of the elevation and pitch of the table?

*Ans.* Just what you mean by "express limitation" I do not now grasp. An express limitation may be by words in the claim, or by necessity of the prior art, in view of which the claim was written, amended or changed, or in view of which it was originally written. Therefore I am compelled to ask what you mean by the expression in your question which I have quoted above.

*Cross-Int.* 111. Do you find in claim 1 or 2 any language requiring the simultaneous change in the elevation and pitch of the table?

*Ans.* My answer must be the same as the last, for the reasons stated.

*Cross-Int.* 112. What language do you find in either claim 1 or 2 which refers to any simultaneous change in the pitch or elevation of the table?

*Ans.* As I have before stated in answer to the last two preceding questions, the question as to whether there is a limitation to a structure within the meaning of the word "simultaneous" of the question, depends entirely upon the prior art and other conditions stated by me, and in this connection I may state that I have not considered the prior art nor the history of the claims referred to, nor any of the reasons leading up to the use of the language of the two particular claims mentioned. I am, therefore, not able to answer the question in the precise way in which it is asked.

*Cross-Int.* 113. I was not inquiring about the prior art; I was asking you concerning the language of the claim as stated in the patent as a matter of mechanical definition.

*Ans.* I so understood the question and my answer now is identically the same as before, for all the reasons stated. And I might add that "mechanical definition" of any of the elements of the claims must necessarily be dependent upon standards and conditions in view of which the words were used, or the terms were employed, in defining the invention of the patent.

*Cross-Int.* 114. Prior to your direct examination had you read the specification of the Heys patent No. 860,377?

*Ans.* Partially.

*Cross-Int.* 115. Then, as I understood you, your construction of the claim in regard to which you testified was not based on the prior art and was given after only a partial reading of the specification; is that correct?

*Ans.* Yes; with this qualification, that by "partial" I mean in contradistinction to studying it in the way that I would with file-wrapper and contents in view, prior art, etc.

*Cross-Int.* 116. Prior to your giving your testimony in this case just what portion of the Heys specification in patent No. 860,377 had you read?

*Ans.* I may say that I skimmed hurriedly over the entire specification, but particularly I read portions beginning with line 105, page 1, down through the paragraph ending on line 34, page 2, and those portions on page 3 beginning line 74 and ending with line 100.

*Cross-Int.* 117. Now, will you kindly read upon the record the portion following line 34 on page 2, at which you say you stopped carefully reading the Heys specification? I refer to matter from lines 35 to 41, inclusive.

*Ans.* It is as follows:—

"Not only is the driving engagement with and to rotate the table maintained in all vertical positions of the table, but because the said table is tipped about the axis of the double bevel-gear *c* (see Fig. 2 and 3), it is possible to tip the table into any desired

angular or oblique position, at any level, without in any manner disturbing the driving connections for rotating it."

*Cross-Int.* 118. Isn't it true that to bring the table into any desired angular or oblique position at any level it is necessary to make use of what you have called the set tipping means disclosed in the Heys patent?

*Ans.* Why, yes, in the sense that said means in accordance with the Heys construction is manipulated to first give the supporting table  $a^3$  a predetermined arrangement relatively to the rotating tool indicated at  $e$ , Fig. 3. This done, manipulation of the treadle  $a^{10}$  to which is connected two rods  $a^9$  and  $b^1$ , will bring about the double function referred to in the several claims to which I have particularly referred.

*Cross-Int.* 119. Do you find in any portion of the specification of the Heys patent any reference to varying the pitch of the work-supporting table?

*Ans.* Yes.

*Cross-Int.* 120. In what part of the specifications?

*Ans.* In the part beginning line 105, page 1, and ending line 3, page 2; and also in the matter beginning line 76, page 3.

*Cross-Int.* 121. In the machine which you examined, to wit, indenting and burnishing machine, Goodyear welt, is any means provided for changing the elevation of the table or work support?

*Ans.* Yes, as heretofore stated by me in answer to previous questions.

*Cross-Int.* 122. How is such change in elevation accomplished?

*Ans.* Through the medium of a treadle, connecting rod and connection of the latter with the table.

*Cross-Int.* 123. Is the table mounted upon a swinging lever?

*Ans.* As I remember it, yes.

*Cross-Int.* 124. Is the arrangement of gearing such that in any position to which the table is swung by the action of the swinging lever the driving mechanism is still effective to rotate the table?

*Ans.* Within the limits of that machine as I saw it operated, yes.

*Cross-Int.* 125. Do you find any reference in either claims 1, 2

or 6 of patent to Heys No. 860,377 to any mechanism for changing the pitch of the table; I mean in direct language?

*Ans.* Yes; in the means which I have heretofore quoted from each of said claims.

*Cross-Int.* 126. Of course you do not find the word "pitch" used in either of the claims referred to?

*Ans.* Why, no.

*Cross-Int.* 127. And it is a matter of opinion on your part, is it, that the word "tip" and changing the pitch are used synonymously?

*Ans.* In the Heys specification and claims; yes.

*Cross-Int.* 128. In claim 3 where the treadle mechanism is referred to it is true, is it not, that the language employed to designate the angular movement of the table is "changing the pitch of the table", while in claims 1, 2 and 6, which make no direct mention of the treadle mechanism, the means for changing the angular position of the table are described as "means also to tip it"?

*Ans.* In the first place, if you intended to quote from claim 3, or if you intended your quotation above to be from claim 3, it is inaccurate, no such expression or language as that quoted by you appearing in the claim. The language is, if you had reference to claim 3, "a treadle and connections between said treadle and table for simultaneously changing the elevation and pitch of the table".

Now, answering the question, the means for changing the angular position of the table, which is your language, or substantially your language, necessarily includes the combination of devices and elements beginning with lever  $a^1$  and extending to rods  $a^2$  and  $b^1$  and connections of said rods at their upper ends with the said table. In the operation of the Heys machine of the said patent 860,377 the angular position of the table is brought about, as well as changes in that position, by the connections just described.

In the static condition of the machine the angular position of the table and changes in that angular position are brought about by the means which I have stated as set means, through the medium

of which the lever  $a'$  of the patent may change the position of said table indicated as  $a^{\circ}$ . Hence in claims 1 and 2, in order to give any meaning to the language thereof, "means also to tip it" and "means to tip it" necessarily have reference to the combined mechanisms and their combined effect to which I have just referred. Of course I appreciate the fact that by dissecting either of these claims, as well claim 3 or even claim 6, it may be possible to cause the language thereof as expressing individual mechanisms or devices to apply to most anything and be wholly senseless in the claims in so far as the structure of the patent is concerned and the true intendment of the language or above claims and specification.

*Cross-Int.* 129. Then, as I understand your testimony, you would deem it a senseless construction of a claim if the claim was construed to cover mechanisms specifically disclosed in the drawings and pointed out and described in the specification of a patent, without also including all the other mechanisms shown and described in said patent?

*Ans.* Oh, no; you have inverted my meaning. What I said was, and the meaning which I intended to convey is, that in construing the particular expressions of the claim they must be given meaning with reference to the specification and the particular co-operation of the part stated for the purposes of the machine structure covered by the patent.

*Cross-Int.* 130. Isn't it one of the purposes of the machine structure covered by the patent to provide means whereby it is possible to tip the table into any desired angular or oblique position at any level without in any manner disturbing the driving connections for rotating it?

*Ans.* Surely, if you understand the word "disturbing" of your question to mean changing the driving relations of the parts.

*Cross-Int.* 131. What do you understand it to mean in view of the Heys specification?

*Ans.* What I stated in the last part of my last answer.

*Cross-Int.* 132. Referring to pulling-over machine, model B, Rex, with regard to which you testified, did you examine it with

sufficient ~~er~~ to be able to identify any of its features in the drawings and specification of United States Letters Patent?

*Ans.* Assuming that your question is directed to a patent which possibly illustrates the particular machine shown me by Mr. Warren, I will say that in so far as I examined that machine I believe I would be able to identify like parts in any patent allegedly covering the same.

*Cross-Int.* 133. To what features in the machine was your attention particularly directed when you examined the same with Mr. Warren?

*Ans.* Shoe-supporting means, pulling-over means arranged at the side and toe of the shoe, and a hand-operated gaging means capable of movement independently of, but relatively to, the pulling-over means and the shoe-supporting means.

*Cross-Int.* 134. What do you mean by "gaging means"; means for gaging what?

*Ans.* I mean the device which I found in that machine consisting of a pivoted, bent lever, having in one end an aperture through which had been thrust a nail. The apparent function of the device is, as I understood the machine, to enable the operative to determine whether the upper is properly positioned on the last and maintains that proper position during the operation of the pulling-over means.

*Cross-Int.* 135. Had you read, prior to your direct testimony in this case, specification of Letters Patent to Heys No. 957,955?

*Ans.* Yes.

*Cross-Int.* 136. Will you please examine the United States Letters Patent granted to the United Shoe Machinery Company on the application of O. Ashton, No. 1,030,763, and state whether or not it illustrates in the drawings and describes in the specifications any features of the pulling-over machine examined by you and in regard to which you testified in your direct examination?

Mr. WEBSTER. Objected to as outside the scope of proper cross-examination, nothing of this kind having been referred to in the direct examination.

*Ans.* I do not recognize in the patent anything of the construc-

tion of the machine which I examined as stated by me in my direct examination.

Mr. PHILLIPS. The Patent Office copy of the Ashton patent No. 1,030,763, June 25, 1912, is offered in evidence.

[*Patent Office copy of Ashton patent No. 1,030,763, June 25, 1912, is marked "Defendants' Exhibit 351, Ashton Patent".*]

Mr. WEBSTER. The introduction of the exhibit is objected to as incompetent, inadmissible and irrelevant, both on the grounds that it has no relation to the matter inquired about on direct examination and for the further reason that it is a copy of a patent issued after the filing of the bill herein.

*Cross-Int.* 137. Will you please describe the gauging device of the Heys patent and the means of moving it into and out of operative position?

*Ans.* You mean the Heys device of patent No. 957,955, granted May 17, 1910?

*Cross-Int.* 138. Yes.

*Ans.* I believe it is fair to assume that the description of the Heys patent referred to by you of the gauge and means for operating the same is correct, and I therefore refer you to the said description. If, however, there is anything in the description or in the illustration of the Heys patent which strikes you as being obtruse, I will be glad to attempt to explain it.

*Cross-Int.* 139. Will you kindly describe in your own language, as you understand it from your study of the patent, the operation of the gauging device of the Heys patent and the means for moving it into and out of operative position?

*Ans.* Referring to Fig. 1 of the drawings of the Heys patent No. 957,955, the numeral 106 refers to a frame portion of the machine at the top of which is pivoted a member carrying a rod 109, the latter being adjustable in said member by means of thumb nut 111. The forward end of the rod, or more properly the lower end of the rod, which co-operates with the upper on the shoe is downly bent and is provided with an anti-frictional ball. A spring 113 tends to normally depress the gauging end of the rod 109, and an arm 112 connected by rod or link 114 is operated to manipulate the

rod 109 through the medium of cam 116 on lever 104 journaled at 92. The foregoing briefly is the construction referred to in the question, detailed description of which will be found in the specification of the Heys patent in the second column of page 5.

*Cross-Int.* 140. Please describe how, by means of mechanism which you have just referred to, the gauge 110 on the rod 109 is thrown into and out of operative position.

*Ans.* Normally the gauge rod 109 is elevated through the medium of the weight of the rod 114 connected to the arm 112 of the member 108 and, in the language of the specification in column on page 5 referred to by me, when the operative depresses the handle 104 to push the last back into the heel portion of the upper the cam 116 of the hub of said handle lever is turned upward and acts upon the roller stud 115 to lift the rod 114, and through the spring 113 throw the tip gauge downward into yielding contact with the upper and in full view of the operative looking down upon the shoe from above.

*Cross-Int.* 141. What is the function of the gauge 110 in the machine illustrated and described in Letters Patent to Heys No. 957,-955?

*Ans.* Primarily to enable the operative to cause the tips of the uppers as stretched upon the last to be uniform in position on the last throughout any number of uppers and tips so placed ; that is, to bring about uniformity of product of the machine with reference to a given style of shoe.

Mr. PHILLIPS. Cross-examination closed.

*Direct Examination resumed by Mr. WEBSTER.*

*Int.* 142. State whether or not the cross-examination has brought to your attention anything which leads you to change your opinion as expressed in your direct examination.

*Ans.* It has not.

Mr. WEBSTER. Redirect examination closed.

[Signature waived.]

Attest : CHARLES K. DARLING, *Special Examiner.*

Adjourned subject to call.

BOSTON, MASS., March 16, 1914.

Mr. WEBSTER. It having been heretofore stipulated and agreed by and between counsel for the respective parties, and to accommodate counsel for both parties, that the introduction of the following exhibits might be delayed until the coming in for the purpose of taking evidence in surrebuttal, therefore the complainant now offers in evidence a certified copy of the file-wrapper and contents in the matter of Letters Patent to Thomas G. Plant, dated January 28, 1908, No. 877,858, entitled "Improvement in Welt and Thread Cutting Means for Sewing Machines", and the same is marked "Plaintiff's Exhibit 287".

[*The complainant also offers in evidence printed Patent Office copies of the patents referred to in said file-wrapper, the same being:*  
*Patent to Coombs, stay-cutting attachment for sewing machines,*  
*dated July 28, 1891, No. 456,692;*  
*Patent to Marsh, stay-cutting attachment for sewing machines, dated*  
*March 7, 1905, No. 784,220;*  
*Patent to Harris, inseam trimming machine, dated March 30, 1897,*  
*No. 579,751;*  
*Patent to Arnold, attachment for applying welts or rands, dated*  
*December 24, 1901, No. 689,532;*  
*Patent to Roberts, thread holder and cutter for buttonhole sewing*  
*machines, dated August 12, 1890, No. 434,181;*  
*Patent to Hawes, thread-trimming device for sewing machines, dated*  
*May 10, 1898, No. 603,688;*  
*Patent to Allen, thread-cutting device for sewing machines, dated*  
*January 5, 1904, No. 749,012;*  
*Patent to Folson, sewing machine, dated May 24, 1864, No.*  
*42,846,*  
which patents are marked "Plaintiff's Exhibit 288".

*It is agreed that said file-wrapper and patents now introduced may have the same force and effect in all respects as if introduced during the time assigned in the order of the court under which this testimony is being taken, and is subject to the following objection by*

*the defendant: that the introduction of said exhibit is unauthorized by and outside the order of the court under which this testimony is being taken, and that all of said exhibits are incompetent, irrelevant and immaterial.*

*Counsel for complainant states that he has no further evidence to offer in rebuttal.]*



ADDITIONAL EVIDENCE FOR DEFENDANTS.

TAKEN PURSUANT TO ORDER OF COURT, ENTERED FEBRUARY  
10, 1914, BEFORE ME,

CHARLES K. DARLING,

*Special Examiner.*

BOSTON, MASS., March 16, 1914.

Present :

ALLEN WEBSTER, Esq., *Special Assistant to the Attorney General,*  
WILLIAM S. GREGG, Esq., *Assistant to the Attorney General,*

*of Counsel for Complainant;*

FREDERICK P. FISH, Esq., and BENJAMIN PHILLIPS, Esq.,  
*of Counsel for Defendants.*

DEPOSITION OF ARTHUR S. BROWNE.

*Direct Examination by BENJAMIN PHILLIPS, Esq.; of Counsel for  
Defendants.*

*Int.* 1. Please state your name, residence, occupation and what experience you have had which enables you to testify as an expert in this case.

*Ans.* Arthur S. Browne; Chevy Chase, Maryland; occupation, patent solicitor and expert. I was graduated from Dartmouth College in 1881, and have been actively and continuously engaged in my present profession for the past thirty-two years. I have had a great deal to do with shoe machinery for twenty-five years last past. My experience has been in examining machines of this character, in preparing and prosecuting applications for patents on such machines, in studying patents in regard thereto, and testifying in patent suits on patents involving such machines.

*Int.* 2. Have you read the direct and cross-examination of Mr. Charles McCormick Chapman, a witness produced in behalf of the petitioner, in rebuttal, under the order of the court under which this testimony is being taken?

*Ans.* Yes.

*Int.* 3. Have you read and do you understand the several Letters Patent of the United States referred to by Mr. Chapman in his said testimony?

*Ans.* Yes.

*Int.* 4. Mr. Chapman has testified in regard to pulling-over machine, model B, Rex, which he states that he examined and compared with claim 55 of Heys patent No. 957,955, May 17, 1910, that such machine did not, in his opinion, infringe said claim 55. Please state whether or not you agree with Mr. Chapman; if not, whether you find in pulling-over machine, model B, Rex, the devices set forth in said claim 55, and if you do, state what errors, in your opinion, led to Mr. Chapman's stated conclusions as to infringement.

*Ans.* I have examined pulling-over machine, model B, Rex, which I will refer to as "model B Rex machine". I do not agree with Mr. Chapman.

Mr. Chapman when he testified evidently had forgotten the construction of the model B Rex machine. In answer to one of the cross-questions, he identified this machine by stating that it had "a pivoted, bent lever, having in one end an aperture through which had been thrust a nail". This is not true of the model B Rex machine.

In order to illustrate the exact construction of the model B Rex machine in this respect, I here produce two photographs of it. One of these photographs shows a shoe in position in the machine, and the other photograph shows the machine with no shoe in it.

[*Photograph of pulling-over machine, model B, Rex, with shoe in, is marked "Defendants' Exhibit 352".*]

*Photograph of pulling-over machine, model B, Rex, without shoe in, is marked "Defendants' Exhibit 353".]*

I have indicated in these photographs the tip-gaging device by the letter "A". Manifestly, this tip-gaging device bears no resemblance to a bent nail.

In further illustration of this model B Rex machine, I refer to the Ashton United States patent No. 1,030,763, June 25, 1912,

which is Defendants' Exhibit 351. This patent illustrates several forms of tip-gaging devices. The form illustrated in Fig. 2 of the drawings of this patent is substantially like the tip-gaging device of the model B Rex machine. The tip-gaging device itself is shown at 16 in Fig. 2 of this patent.

As I understand Mr. Chapman's evidence, he does not dispute the presence of the several elements of claim 55 of the Heys patent No. 957,955 in the model B Rex machine, but his contention is that there is no "co-operation of said device" (namely, the tip-gaging device) "with the pulling-over means as called for by the said claim 55 of the patent".

In this Mr. Chapman is in error, because in the model B Rex machine there is exactly the same co-operation between the tip-gaging device and the pulling-over means as there is between the corresponding characteristics of the machine of the Heys patent No. 957,955.

The purpose of the machine of the Heys patent No. 957,955 is to pull the upper tightly over the shoe last preparatory to securing the upper to the last so that the upper will be in proper condition for the subsequent operations of securing the upper to the sole of the shoe. It is highly important that the upper should be exactly fitted to the last and in proper relation thereto.

The object of the tip-gaging device shown at 110 in various figures of the drawings of the Heys patent No. 957,955, such as Figs. 1 and 3, is to afford a guide to enable the operator to so adjust the shoe upper to the last that he knows that it is in just the right relation.

The tip-gaging device of model B Rex machine has exactly the same function and office.

In both machines, after the shoe has been placed in the machine the workman swings the tip-gaging device into position over the forepart of the shoe. If the tip-gaging device then registers accurately with the tip seam of the shoe, the operator knows that the shoe upper is properly related to the last.

If this proper relation does not exist, then in both machines the workman makes the proper manipulation to secure relative move-

ment between the last and the upper so that the tip gauge will register with the tip seam of the shoe upper.

In both machines this adjustment which is determined by the tip-gaging device puts the shoe upper in the proper position for the further action of the pulling-over means.

Accordingly, there is exactly the same co-operation in the two machines between the tip-gaging device and the pulling-over means. In both machines there is a true co-operation between those instrumentalities because the proper action of the pulling-over means is determined by the tip-gaging device.

Accordingly, I do not agree with Mr. Chapman. The entire subject-matter of claim 55 of the Heys patent No. 957,955 is present in the pulling-over machine, model B, Rex.

*Int. 5.* Mr. Chapman also referred to indenting and burnishing machine, Goodyear welt, which he said he compared with claims 1, 2 and 6 of patent to Heys No. 860,377, June 16, 1907, and that, in his opinion, said machine did not infringe said claims. State whether or not you have examined this machine, and, if you have, state whether you agree with Mr. Chapman as to his conclusion as to infringement, and, if not, state whether or not you find in such machine the mechanism set forth in said claims and point out, in your opinion, what are the errors which led Mr. Chapman to the conclusions as to the infringement which he stated.

*Ans.* I have examined this indenting and burnishing machine, Goodyear welt, which I will hereafter refer to as indenting and burnishing machine. I do not agree with Mr. Chapman.

The purpose of the Heys patent No. 860,377 is to make indentations in the upper surface of the projecting edge of the shoe. The work is done by the co-operation of an indenting and burnishing tool shown at *e* in the drawings of the Heys patent and a work table *a*. When the shoe is being acted upon the sole rests on the work table and the projecting edge extends below the indenting and burnishing tool *e*. This work table is rotated by suitable driving gear so that it acts to feed the shoe along during the indenting and burnishing operation.

Mr. Chapman gives one reason which, in his opinion, excludes

indenting and burnishing machine from each of claims 1, 2 and 6 of the Heys patent No. 860,377, and he gives a second reason why, in his opinion, the indenting and burnishing machine does not have the subject-matter of claim 6 of said patent.

I will take up this second reason first. With respect to the second reason given by Mr. Chapman, he is in error as to the construction and mode of operation of the indenting and burnishing machine.

Mr. Chapman says that this indenting and burnishing machine lacks "a worm and worm wheel connections geared to, and to rotate, the said table in any of its positions" as defined in claim 6.

The worm and worm wheel thus defined in claim 6 are shown at  $c^4$  and  $c^3$  in Figures 1 and 2 of the drawings of the Heys patent No. 860,377.

The indenting and burnishing machine has a similar worm and worm wheel, which Mr. Chapman evidently overlooked in his examination of this machine.

In order to illustrate the indenting and burnishing machine I here produce drawings thereof, comprising two sheets.

[*Drawings, in two sheets, of indenting and burnishing machine, Goodyear welt, are marked "Defendants' Exhibit 354".*]

As shown in these drawings, 10 is the rotary work table. It receives its rotation from a power shaft 5. This power shaft carries a worm 20, shown in Fig. 2, and this worm co-operates with a worm wheel A shown in Fig. 3. Accordingly, indenting and burnishing machine has "a worm wheel connection geared to rotate said table in any of its positions", as called for by claim 6 of the Heys patent 860,377. Indeed, the driving gearing for the work table in the indenting and burnishing machine is substantially identical with that of the Heys patent.

Heys has the main shaft  $c^5$ , the worm  $c^4$ , the worm wheel  $c^3$ , the pinion  $c^1$  (see Fig. 7), the double-tooth pinion  $c$ , gear teeth on the work table  $a^5$ , together with the shafts and spindles therefor. Similarly the indenting and burnishing machine has the main shaft 5, the worm 20, the worm wheel A, the pinion 18, the double-tooth

pinion 17, 15, the gear teeth 14 on the work table, and the shafts and spindles carrying said gears.

Mr. Chapman's other reason is applicable to each of claims 1, 2 and 6 of the Heys patent No. 860,377. Each of these three claims recites "means to tip" the work table, and Mr. Chapman denies that this feature is present in the indenting and burnishing machine.

The work table tipping means of the Heys patent 860,377 is best shown in Fig. 3 of the drawings. As there shown, the work table  $a^3$  is carried by a table lever  $a^4$ , which is pivoted at  $a^2$  on the upper end of a supporting rod  $a^5$ . At its outer end this table lever  $a^4$  has a fork which embraces a double flanged adjusting nut  $b^4$ , which can be screwed up and down on the rod  $b$ . By adjusting this nut, the table lever  $a^4$  can be swung up and down, thus tipping the table more or less, thereby adapting the machine to the particular character of work for which it is for the time being intended.

The indenting and burnishing machine has means for giving the same tip to the table, for the same purpose. As shown in Figs. 1 and 2 of the drawings, Defendants' Exhibit 354, the work table 10 is supported by, and turns upon, a bracket 11, which in turn is adjustably connected to arm 12. This bracket has an elongated slot and the arm 12 carries an adjustable clamping bolt 13 which passes through this slot. By loosening this bolt 13 the work table can be tipped to any desired extent within the range of adjustment and can be maintained in any adjusted position by tightening up the clamping bolt 13.

Accordingly, the indenting and burnishing machine has "means to tip" the work table as specified in each of claims 1, 2 and 6 of the Heys patent, and this table-tipping means is from a mechanical viewpoint identical with the corresponding table-tipping means of Heys patent No. 860,377, which I have just described, and has the same purpose and effect.

Mr. Chapman's contention of lack of infringement of these claims is based upon the circumstance that the Heys patent No. 860,377 has a second means for tilting the work table. He refers to the table-tipping means which I have just described as "set" means,

meaning thereby, I assume, that by this tipping means the work table can be set to any tipped position which the attendant may desire.

He contends, however, that the essential characteristic of the table-tipping means defined in claims 1, 2 and 6 demands the presence of the other tilting mechanism shown in the patent.

It will be noted on reference to the patent that the rod  $a^2$  which supports the table lever  $a'$  is connected through a coupling  $a^{12}$  and a rod  $a^3$  to a treadle  $a^{10}$ . Likewise, the rod  $b$  which supports the adjusting nut  $b'$  for tipping the work table is connected by a link  $b'$  with the same treadle. The connections between these respective rods and the treadle are at different distances from the pivot  $a^{11}$  of the treadle. Consequently, as the treadle is depressed these respective supporting rods are moved to different extents and with the result of giving a tilt to the table as it is raised and lowered.

Mr. Chapman endeavors to include these instrumentalities in claims 1, 2 and 6 under the expression "means to tip" the work table.

This contention is negated by the patent itself.

The Heys patent refers to this tilting action not as tipping the table, but as varying its pitch. For example, beginning at line 76, page 3, the specification says: "I will now explain why I have provided the means for varying the pitch of the work-supporting table simultaneously with the depression of the same." This makes it unmistakable that the pitch-varying means is operative when the work-supporting table is depressed, which is not true of the table-tipping means, which is a "set" means for maintaining a desired operative adjustment.

When Heys wanted to claim his pitch-varying means he did so by appropriate language. Claims 3, 4, 5 and 14 of the patent include this changing of the pitch of the table. For example, claim 3 refers to "connections between said treadle and table for simultaneously changing the elevation and pitch of the table".

It is therefore certain that Heys does not refer to this pitch-varying means when he recites "means to tip" the work table in claims 1, 2 and 6.

Accordingly, I find the subject-matter of each of these claims 1, 2 and 6 of the Heys patent No. 860,377 in the indenting and burnishing machine made by the defendant.

Indeed, it would be interesting to know how Mr. Chapman would draw a claim different from claims 1, 2 and 6 if he wished to define the "set" table-tipping means of the Heys patent to the exclusion of the pitch-varying means. Obviously these identical claims would have been appropriate in a patent specification describing indenting and burnishing machine.

*Int.* 6. Mr. Chapman, a witness called on behalf of the petitioner, was interrogated in regard to loading and attaching machine, model B, McKay automatic heel, as manufactured by the United Shoe Machinery Company, and states that he examined that machine and compared the same with claims 10 and 11 of patent to Plant No. 958,282, May 17, 1910, and that, in his opinion, said claims 10 and 11 are not infringed by said machine. Please state whether or not you have examined the machine referred to by Mr. Chapman and whether you agree with him in the conclusions which he has stated in regard to said claims 10 and 11 of patent to Plant No. 958,282. If not, state whether or not, in your opinion, said machine embodies the mechanism set forth in said claims, and point out briefly what, in your opinion, are the errors, if any, in the premises whereby Mr. Chapman reached his stated conclusion as to infringement.

*Ans.* I have examined the loading and attaching machine, model B, McKay automatic heel, and I will refer to it as the loading and attaching machine, model B. Mr. Chapman is in error as to the construction and operation of this machine.

Mr. Chapman states that loading and attaching machine, model B, does not have "nail driving devices sustained by the cross-head" as recited in claim 10 of Plant patent No. 958,282, and that it does not have "nail drivers carried by the cross-head" as recited in claim 11 of said patent.

Mr. Chapman is wrong as to the facts.

In the machine of this Plant patent the main functional office of the cross-head is to compress a heel prior to driving nails into the

heel. The cross-head rigidly sustains a nail block having apertures for the nails. After the heel has been compressed by the cross-head then the nail-driving devices, carried and sustained by the cross-head, have an independent movement of their own, and as a result the nail drivers registering with the holes in the nail block drive the nails into the heel.

All of this is true of the loading and attaching machine, model B. To illustrate this machine I produce a photograph of it, to which I have added reference letters to indicate the parts to correspond to those recited in claims 10 and 11 of the said Plant patent No. 958,282.

[*Photograph of loading and attaching machine, model B, McKay automatic heel, is offered in evidence, and marked "Defendants' Exhibit 355".*]

As shown in this photograph, the loading and attaching machine, model B, has an open frame cross-head comprising two horizontal bars A and B rigidly connected to each other by means of two vertical rods C. Only one of these two rods C is shown in the photograph, the second one being concealed by the intervening mechanism. The upper bar A carries the nail block with its apertures in which the nails are placed preparatory to being driven into the heel.

The gang of nail drivers is shown at D. These nail drivers, constituting nail-driving devices, are mounted upon a horizontal bar E, which has rigidly connected with it two depending sleeves F. Each of these sleeves F surrounds one of the vertical rods C, upon the frame cross-head.

When the machine is at rest these sleeves F rest upon the lower bar B of the cross-head. Accordingly, the cross-head sustains and carries the nail drivers or nail-driving devices.

In the action of the machine the cross-head is first moved for the purpose of compressing the heel. This movement is effected by toggles which are shown at G in the photograph. After the heel has thus been compressed, the nail drivers or nail-driving devices have a movement of their own independent of the cross-head, this movement being effected by the toggle shown at H in the photo-

## 2836 (132) ADDITIONAL EVIDENCE FOR DEFENDANTS.

graph. As a result of this independent movement of the nail drivers the nails are driven into the heel.

As pointed out, Mr. Chapman's contention of non-infringement is based upon the supposition that the nail-driving devices or nail drivers are not sustained or carried by the cross-head. In this he is wrong.

Loading and attaching machine, model B, contains and embodies the entire subject-matter of each of claims 10 and 11 of Plant patent No. 958,282.

*Inq.* 7. Referring to lockstitch machine, model M, No. 927, which Mr. Chapman states was shown him by Mr. Warren, Mr. Chapman testified in substance that he finds therein all the elements called for by claims 1, 2, 4, 5 and 9 of patent to Plant No. 940,723, November 23, 1909, and all the elements called for in claims 9 and 10 of patent to Plant No. 940,725 in substantially the relation noted and apparently for the same purpose. He also states that each of said claims calls for the movement of a slitting device to initial position to cause said device to slit the work, this being on return movement of the said device, and states that this feature is a distinguishing element lending alleged patentability or patentable novelty to each of the claims. He also referred to this feature as a trivial limitation and hardly important enough to impart patentable novelty to said claims. What have you to say in regard to these statements by Mr. Chapman?

*Aus.* I have examined lockstitch machine, model M, No. 927, which I will refer to as "lockstitch machine—model M". I agree with Mr. Chapman that this machine has the subject-matter of the claims of the two Plant patents No. 940,723 and No. 940,725 as enumerated in the question. I do not agree with Mr. Chapman's assertion that the improvement, consisting of the slitting knife and its adjuncts, is a triviality. On the contrary, it is a valuable and important improvement upon the character of lockstitch sewing machine shown in the two Plant patents and exemplified by the lockstitch machine, model M.

These lockstitch machines are used to sew the out-sole to the shoe, the stitches passing through the out-sole and through the projecting welt extending outwardly from the insole of the shoe.

## DEPOSITION OF ARTHUR S. BROWNE. 2836 (133)

The purpose of the movable slitting knife is to cut a slit in which the stitches may be concealed.

One of these lockstitch machines is a very intricate and complicated machine involving a large number of operative instrumentalities working within a small space. Such a machine involves a needle, a looper, a shuttle, a take-up, a movable presser-foot, a work table, a pull-off, a thread-measuring finger, and feeding mechanism which comprises an awl and awl carrier. These parts must co-operate together in making the stitches, and many of them have to be grouped right close to the stitch-making point.

One of the important factors in the machine resides in the awl-feeding mechanism. This awl is a slender instrument which has to pierce the welt and the out-sole, then feed the shoe along, and then retire from the leather and move backwardly to its initial position ready for again feeding the shoe. After the awl has completed its feeding movement the presser-foot clamps the shoe in place.

On account of the slender nature of the awl, it is important that its labor should be minimized in the case of a high-speed machine.

The inventions of the two patents to Plant in question include a slitting knife, the purpose of which is to make a slit in advance of the stitching. The knife is a movable one, and it is so organized that it performs its slitting movement at a time when the shoe is clamped against the work table by the presser-foot and when the awl is performing its idle return movement and not doing any mechanical work.

As the result of this organization the knife performs its work at the right place, and at the right time, and without burdening the awl. It performs its cutting stroke when the shoe is clamped in place, so that the cutting stroke is of a uniform depth and uniform length.

In the organization of these two Plant patents, and in the lockstitch machine, model M, the movable slitting knife is applicable to high-speed machines and does not involve any cutting down of the speed thereof.

I do not understand on what ground Mr. Chapman characterizes

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2836 (134) ADDITIONAL EVIDENCE FOR DEFENDANTS.

this improvement as a trivial one. It can only be compared with a stationary knife. Obviously, if the knife were stationary it could slit the leather only when the leather was being fed along by the awl, thus imposing additional labor upon the awl, which, already, has the maximum mechanical work to perform in the machine. Also, the cutting of the stationary knife would be accomplished when the shoe was not clamped in place by the presser-foot and work table, since the feeding of the shoe demands that it shall not be clamped in place. Accordingly, the depths of the slit would be variable.

In the case of a high-speed machine, the slitting work accomplished by a stationary knife would be the result of the movement of the slender awl and the result inevitably would be to flex the awl more or less and accordingly to make stitches of variable lengths.

There is no justification for belittling the importance of this improvement. It is an advantage and a very meritorious improvement.

*Int. 8.* Have you examined the machine officially known as "Lockstitch Machine, Model K, Goodyear Outsole Rapid"? If so, how does the fudge-stitch mechanism of that machine compare with that embodied in the model M machine?

*Ans.* I have examined the model K machine, and so far as the fudge-stitch mechanism, namely, the movable slitting knife and its adjuncts, is concerned the model K is like the model M.

*Int. 9.* Mr. Chapman, a witness called in behalf of the petitioner, testifies that he examined nailing machine, American Lightning, No. 3070, and made a comparison of the same with claims 15 and 16 of patent to Plant No. 958,302, May 17, 1910, and that, in his opinion, said claims 15 and 16 are not infringed by said machine. Please state whether or not you have examined said machine, whether or not you agree with Mr. Chapman in his conclusions, and whether or not you find in said machine the mechanisms set forth in said claims 15 and 16 of said Plant patent No. 958,302.

*Ans.* I have examined the nailing machine, American Lightning, No. 3070, which I will refer to as the "American Lightning ma-

chine". I do not agree with Mr. Chapman. This machine does embody the subject-matter of each of claims 15 and 16 of the Plant patent No. 958,302.

Concerning claim 16, Mr. Chapman states that its subject-matter is not in the American Lightning machine, because that machine lacks "devices for operating on a heel", coupled with the further clause or element of the claim "of means for guiding said devices and apertures into alignment".

In this Mr. Chapman is mistaken. The purpose of the machine of this Plant patent No. 958,302 is to drive nails into a heel at an angle to the outer or tread face of the heel, as shown in Fig. 14 of the patent drawings. This diagonal driving is especially useful in connection with heels which are inclined forwardly at the rear, as is conspicuously true of the heel of a lady's shoe, and to some degree in practically all shoes.

As shown in the Plant patent, there is a stationary nail block 44, having apertures in which the nails are inserted preparatory to being driven into the heel. The driving of the nails is accomplished by a plurality or gang of nail drivers 56, which move in and out of the apertures of the nail block 44. These nail drivers are carried by a suitable reciprocating support.

It is highly important in this organization that when the nail-driving devices or nail drivers descend for the purpose of entering the holes in the nail block and driving the nails that they should accurately register with the nail holes as they approach them. This is particularly important, as any lost motion or loose joints may result in the nail drivers hitting the nail block and not entering the holes. Accordingly, the Plant patent provides means for guiding the devices which operate on the heel. These guiding means comprise a guide 104, shown in Fig. 14, which co-operates with the roller 107, carried by the nail drivers' support at one side. As a result, the nail drivers are brought into proper registration with the nail holes in the nail block.

Also the organization is such that just as soon as registration is effected the guiding means lose control of the nail drivers so that

thereafter they are free to accommodate themselves to the nail block as occasion may demand.

The American Lightning machine has the same guiding means as called for by claim 16 of the Plant patent No. 958,302. In order to explain the American Lightning machine I refer to the Pope patent No. 1,072,986, September 9, 1913, which constitutes one of the patents included in Defendants' Exhibit 164. This Pope patent illustrates the pertinent mechanism of the American Lightning machine.

As shown in the drawings, there is a stationary nail block 12 having nail holes 13, into which the nails are introduced preparatory to their being driven into the heel of the shoe. These nail holes extend at an inclination, as is desired in nailing the class of heels to which I have referred.

Above the nail block is a reciprocating cross-head 14, which carries the support for the nail drivers 26, which in this Pope patent constitutes the means for operating on the heel. The support for the nail drivers is a slide composed of a block 24 and a plate 22. The nail drivers are guided into proper registration with the nail holes 13 by means of a guide rod 32, and an aperture in the outer end of the slide plate 22. This guide rod 32 is mounted upon a fixed support 36.

When the heel-operating devices, namely, the drivers, are in their raised position, the guide rod 32 enters the hole in the driver slide, as shown in Fig. 1. As the drivers descend, this guiding means accurately guides the drivers until their lower ends are in register with the holes in the nail block beneath. As soon as this registration is secured, the guiding means loses control of the nail drivers, because the aperture in the slide passes below the end of the guide rod 32. Thereafter the guiding means no longer controls the nail drivers, which are free to accommodate themselves to the holes in the nail block.

Mr. Chapman's contention is that this American Lightning machine does not have the subject-matter of claim 16 of the Plant patent No. 958,302, because it has no "devices for operating on a heel". Obviously this is wrong, because the American Lightning

machine has the nail drivers 26, which are devices for operating on a heel and correspond exactly to the like nail drivers of the Plant patent.

On cross-examination, however, it seems that Mr. Chapman endeavors to distinguish between the Plant machine and the American Lightning machine, because Plant has two groups of tools which operate upon the heel, whereas the American Lightning machine has only one group of tools, namely, the drivers.

In the machine of the Plant patent No. 958,302 there is a set of awls 54, as well as the set of nail drivers 56, and the specific operation of the machine is, first, to puncture holes in the heel by means of the awls, and then to move the awls out of action and bring the nail drivers into action, so that the nail drivers drive the nails into the holes punctured in the heel by the awls.

Mr. Chapman's contention, as I understand it, is that the "devices for operating on a heel", as recited in claim 16, necessarily mean both awls and the drivers, and because under this contention the American Lightning machine only has half of the Plant invention, the subject-matter of the claim is not present.

This contention is untenable, as demonstrated by the Plant patent itself.

In the first place, "devices for operating on a heel", as defined in claim 16, is a generic expression equally applicable to define both the drivers and the awls. Plant was entitled to a claim which would cover his guiding means, whether used with awls or with drivers. He could not have chosen more apt language than that used in claim 16 to cover generically the invention. Indeed, claim 16 would be an appropriate claim to present in a patent specification on the American Lightning machine; it is also apparent from other claims presented in this Plant patent that when Plant wished to be specific he knew how to do so by proper language. When he wanted to claim both awls and drivers he did so in the manner shown by claim 25, which calls for a turret having "awls and drivers". On the other hand, when he wished to identify one set of his heel-operating devices he did so by proper language. Take claim 5, for example, which specifies "nail driving devices".

Moreover, the claims are in accord with the specification. Beginning at line 25, page 2, the specification says: "Preferably the intended offices of the machine are performed by an appropriate tool or tools when a heel is engaged between the anvil 30 and the nail block 44. In the illustrative machine (Fig. 3) there are two groups of tools — a gang of awls 54 and a gang of drivers 56 which in the usual manner enter apertures in the nail block 44."

Further on, beginning at line 103, page 2, the Plant patent specifically says: "Preferably some means is provided for guiding the awls or drivers in their downward movement in order to aline them with the apertures in the nail block."

Hence, it is apparent that the invention including the guiding means is applicable to either the awls or the nail drivers optionally, and that the inclusion of both of these sets of tools in one machine is merely illustrative of the generic invention.

Accordingly, therefore, I find the entire subject-matter of claim 16 in the American Lightning machine.

In connection with claim 15 of this Plant patent No. 958,302, Mr. Chapman urges the same contention with respect to claim 15, which I need not further discuss.

In addition, he gives another reason for not finding the subject-matter of claim 15 in the American Lightning machine, namely, that claim 15 recites "said moving parts and supports having one a slot parallel with the apertures in said block".

That is to say, in the Plant patent the guide 104 is parallel with the holes in the nail block 44. On the other hand, the guide of the American Lightning machine, as shown at 32 in the drawings of the Pope patent No. 1,072,986, is at an inclination to the holes in the nail block.

This geometrical distinction between the two machines does exist.

Practically there is no substantial difference between the two machines in which the instrumentalities act in the same way for producing the same result. In both machines it is desired to drive the nails at an angle to the tread face of the heel. This Plant accomplished by inclining his entire machine, as shown in Fig. 6

of the drawings of his patent No. 958,302; and thus inclining the entire machine his guide is parallel with his nail holes. But, on the contrary, in the American Lightning machine the same result is obtained, not by inclining the entire machine, but by inclining the holes in the nail blocks and correspondingly inclining the nail drivers.

In both machines the purpose of the guiding means is to guide the nail drivers until they register with the nail holes and then to lose control over the nail drivers, so that thereafter the nail drivers may accommodate themselves to the holes in the nail block. From a mechanical viewpoint the two arrangements are equivalent.

Accordingly I find the subject-matter of claim 15 of the Plant patent No. 958,302 in the American Lightning machine.

*Int.* 10. Mr. Chapman has referred to wheeling machine No. 2, Goodyear impression stitch, which he says was shown to him by Mr. Warren, and carries name-plate indicating Booth Brothers, No. 986. Mr. Chapman states that he made a comparison of claims 2 and 5 of the Heys patent No. 784,263, March 7, 1905, with the structure of said machine and reached the conclusion that claims 2 and 5 of the patent are not infringed by said machine. Please state whether or not you agree with Mr. Chapman in his conclusion. If not, state whether, in your opinion, said machine embodies the subject-matter of claims 2 and 5.

*Ans.* I have examined the wheeling machine No. 2, Goodyear impression stitch, bearing the name-plate with the words "Booth Brothers", and the number "986". I will refer to it as the wheeling machine No. 2.

I do not agree with Mr. Chapman. Mr. Chapman points out a mechanical difference which does exist between the machine of the Heys patent No. 784,263 and the wheeling machine No. 2, but this is of no importance, because the construction of the wheeling machine No. 2 simply has a reversal of corresponding parts of the Heys patent No. 784,263, accomplishing the same purpose. This Heys patent No. 784,263 is for a stitch-indenting machine for making indentations on the upper surface of the projecting margin of the shoe sole, and its co-operative instrumentalities are

a support 60 for the shoe sole, and a power-driven rotary indenting tool 26. Figures 1 and 2 of the drawings of the Heys patent show the shoe in position between the shoe support and the rotating indenting tool.

As disclosed in this Heys patent, when the shoe is to be placed into operating position on the machine and withdrawn therefrom after the work has been completed, there is a relative separation effected between the shoe support and the indenting tool. At the same time the rotary tool is unclutched from its power pulley, so that the tool does not rotate when the machine is idle. In the specific embodiment of the invention shown in the patent, the separation between the tool and the shoe support is effected by moving the tool away from the shoe support concurrently with the unclutching of the rotary tool from its driver.

The only difference between the machine of the Heys patent, so far as the subject-matter of claims 2 and 5 thereof are concerned, and the wheeling machine No. 2 is that in the wheeling machine No. 2 the separation of the tool and shoe support is effected by moving the shoe support away from the tool instead of moving the tool away from the support. This is an obvious reversal and from the mechanical viewpoint the two arrangements are equivalent.

The construction of the wheeling machine No. 2 is illustrated in the Flynt patent No. 958,913, May 24, 1910, which constitutes one of the patents in Defendants' Exhibit 199. As shown in the drawings of this patent, 2 is the rotary impression wheel, and 24 is the work support. When the shoe is to be placed in the machine or removed, the work table is moved downwardly away from the tool, and at the same time the tool is unclutched from its source of power. This reversal of the movement of two operating parts is the distinction which Mr. Chapman relies upon in distinguishing the wheeling machine No. 2 from the subject-matter of claims 2 and 5.

In this connection, Mr. Chapman says that the wheeling machine No. 2 lacks the elements of claim 2, which are defined as "movable means for supporting the tool", in combination with "mechanism for automatically moving said supporting means to inactive posi-

tion and operating said clutch to effect a cessation of rotation of the tool.' " And, "as to claim 5, the machine lacks the element 'a movable head therefor', referring to the movable head of the patent for supporting the rotary tool", and also "lacks the element of claim 5 'means for simultaneously unclutching the clutch mechanism from the shaft to stop the rotation of said tool and moving the said head toward inoperative position'."

Mr. Chapman is correct as to the distinction that he draws with respect to the mechanical facts, but he does not point out that the wheeling machine No. 2 has a mere reversal of the movement of the parts defined in these two claims. This mere reversal is a mechanical equivalent from a mechanical viewpoint. Therefore, wheeling machine No. 2 contains the entire subject-matter of each of claims 2 and 5 of the Heys patent No. 784,263.

Mr. PHILLIPS. The direct examination of the witness is closed, reserving, however, the right to recall the witness in case counsel has inadvertently failed to ask him any questions.

[*Hearing adjourned, subject to agreement of counsel.*]

BOSTON, MASS., March 19, 1914.

*Cross Examination by ALLEN WEBSTER, Esq., of Counsel for  
THE UNITED STATES.*

Mr. WEBSTER. In view of the fact that the deposition of this witness consists largely of matter in the nature of argument rather than testimony, counsel for complainant objects to the same and reserves the right to insist upon such objection at the hearing, and the cross-examination will be without waiver of such right.

*Cross-Int. 11.* You have testified to a considerable extent with reference to the practicability of the machines to which you have made reference; have you had any experience in the operation of any of said machines?

*Ans.* Only to the extent of having seen them work; I have never personally done the work on these machines.

*Cross-Int. 12.* Have you ever compared the operation of the machines about which you have testified with other machines designed to accomplish similar results?

*Ans.* No.

*Cross-Int.* 13. As I understand your testimony, you concede that Mr. Chapman's statements as a general rule with reference to the mechanical differences are correct, but that such changes merely, in your opinion, amount to reversals or mechanical equivalents. Kindly state if I am right in my understanding.

*Ans.* You are so far as Heys patent No. 784,363 and a comparison with the wheeling machine No. 2 is concerned, and so far as the comparison between the second reason urged by Mr. Chapman in comparing claim 15 of the Plant patent No. 958,302 with the American Lightning machine is concerned.

*Cross-Int.* 14. In testifying with reference to pulling-over machine, model B, Rex, you say, as I understand you, that you have examined the machine to which you made reference. Will you kindly examine the patent to Heys No. 957,955, to which you made reference in your testimony, and particularly examine Fig. 1, the part marked "109", and state whether you found in the machine examined by you a rod or part shaped like the part marked "109" in Fig. 1?

*Ans.* I did not. The shape of the corresponding guiding device in pulling-over machine, model B, Rex, is well shown in the photographs Defendants' Exhibit 353 and Defendants' Exhibit 352. As shown by both these photographs, the specific shape of the guiding device is different from that of the guiding device 109, Fig. 1 of the Heys patent.

**Mr. WEBSTER.** All of the foregoing answer following the words "I did not" is objected to as not responsive.

*Cross-Int.* 15. Do you wish the court to understand that the general construction of the machine examined by you, and as stated by you is illustrated in Defendants' Exhibits Photographs No. 352 and 353, is the same as the machine illustrated in patent to Heys No. 957,955?

*Ans.* No.

*Cross-Int.* 16. Now, it is a fact, is it not, that the gaging device referred to in claim 55 of the Heys patent 957,955 is merely some kind of a device which is laid over on top of, or just above, the

shoe to indicate to the operative where to move the upper; am I right?

*Ans.* Yes.

*Cross-Int.* 17. And any kind of a contrivance that would be capable of being moved over and indicate the position to which the leather was to be moved would accomplish the desired result, would it not?

*Ans.* Yes.

*Cross-Int.* 18. And in the device of the patent to Heys referred to in the claim in question the operative moves this gaging or indicating device into position, does he not?

*Ans.* Yes.

*Cross-Int.* 19. And the same result would be obtained whether he moved it into position by a foot lever or simply took hold of the measuring device by hand, would it not?

*Ans.* Yes.

*Cross-Int.* 20. Then the gaging device of claim 55 is merely some kind of an arm which is capable of being moved over and held at the desired point on top of, or just above, the leather, is it not?

*Ans.* Yes.

*Cross-Int.* 21. And, as I read your testimony, the only material difference between your testimony and Mr. Chapman's with reference to this contrivance is that you contend that it co-operates with the rest of the machine, while Mr. Chapman claims that there is no co-operation; am I right in my understanding?

*Ans.* I don't think so. Mr. Chapman's contention, as I understand it, is that the pulling-over machine, model B, Rex, does not have the subject-matter of claim 55 because it lacks the combination or co-operation called for by that claim. I do not agree with Mr. Chapman because there is exactly the same co-operation and combination in the pulling-over machine, model B, Rex, as there is in the machine of the Heys patent.

*Cross-Int.* 22. The real difference between you two experts is that one claims there is co-operation, and the other claims there is no co-operation; is not that correct?

*Ans.* No; not at all. Mr. Chapman does not deny that co-opera-

tion exists in the machine of the Heys patent. What he does state is that the pulling-over machine, model B, Rex, does not have the subject-matter of the claim because it lacks the co-operation existing in the machine of the Heys patent. In that he is wrong. There is exactly the same co-operation in the pulling-over machine, model B, Rex, as there is in the machine of the Heys patent.

*Cross-Int.* 23. Then the differences between you do hover around co-operation, do they?

*Ans.* Yes, so far as the pulling-over machine, model B, Rex, is concerned, Mr. Chapman denying that that machine has the same co-operation which is present in the Heys machine.

*Cross-Int.* 24. As I understand your testimony relating to indenting and burnishing machine, I understand you to hold that in the patent to Heys No. 860,377, about which you testified, that the word "pitch" means something different from the word "tip"; am I right in my understanding?

*Ans.* Yes; as the patent itself makes the distinction. That is to say, there is one particular kind of tilting or tipping which the patent refers to as varying the pitch, this occurring simultaneously with the depression of the work-supporting table. In addition the patent describes a tipping of the table by means of an adjustment with which the machine is provided.

*Cross-Int.* 25. In the machine examined by you does the work support tip at all simultaneously with the depression of the same?

*Ans.* In an absolute sense I presume that is true. That is to say, in the indenting and burnishing machine the work table is carried by a swinging arm, shown at 54 in Defendants' Exhibit 354, and consequently as the work table is depressed when this arm swings its angle to any given plane changes.

*Cross-Int.* 26. Then you state as a fact, do you, that the machine examined by you, and to which you have testified, is so constructed that when the supporting table is moved vertically its pitch is varied at the same time?

*Ans.* Absolutely; yes; but not within the meaning of the Heys patent.

*Cross-Int.* 27. And when you say "not within the meaning of

the Heys patent" you mean not within the meaning of the claims to which you have made reference in the Heys patent, do you?

*Ans.* Yes; so far as those claims are concerned which are directed to varying the pitch of the table, such as claims 3, 4, 5 and 14. The claims which I discussed, namely, claims 1, 2 and 6, have nothing to do with varying the pitch.

*Cross-Int.* 28. You testified with reference to loading and attaching machine, model B, McKay automatic heel; you say, among other things: "In the machine of this Plant patent the main functional office of the cross-head is to compress a heel prior to driving nails into the heel." Do you understand that this function was not employed in any nail-driving machine prior to its employment as set out in the Plant patent?

Mr. PHILLIPS. Question objected to as not pertinent to any matter touched upon in the direct examination of this witness, and as outside the order of the court under which this testimony is being taken.

*Ans.* No.

*Cross-Int.* 29. The question as to the function of a part as defined in a claim is to be determined somewhat, is it not, by the prior art?

*Ans.* No.

*Cross-Int.* 30. Then do you say the prior art makes no difference?

Mr. PHILLIPS. Objected to as improper cross-examination.

*Ans.* Absolutely. A device performs its functions whether it is old or new.

*Cross-Int.* 31. Then the meaning of a claim is precisely the same, is it, without reference to the prior art?

Mr. PHILLIPS. Objected to as improper cross-examination.

*Ans.* Yes, unless the claim is an ambiguous one. If the claim is plain and it is unmistakable on its face in connection with the patent of which it forms a part, no extraneous matters are necessary in order to understand its meaning. If the claim, however, is ambiguous, it may be necessary to seek light outside of the patent itself to find out the meaning.

*Cross-Int.* 32. Do you wish to convey the impression to the court

that the photograph Defendants' Exhibit 355 is a picture of the machine illustrated in the patent to Plant No. 958,282?

*Ans.* No.

*Cross-Int.* 33. There is in fact a vast difference in the construction and operation of the two machines, is there not?

*Ans.* There are many differences.

*Cross-Int.* 34. I note, in testifying with reference to lockstitch machine, model M, in speaking of the awl, you say "it is a slender instrument". Kindly state, if you are able, the diameter of the awl to which you refer.

*Ans.* It is a long time since I have actually measured an awl. It is somewhat larger in diameter than a needle.

*Cross-Int.* 35. Can you tell the diameter of a needle?

*Ans.* Not in fractions of an inch.

*Cross-Int.* 36. Can you approximate it?

*Ans.* Not sufficiently to justify a statement. There is one of these awls in evidence, Defendants' Exhibit 111. It speaks for itself as to the dimensions of the awl.

*Cross-Int.* 37. As it may not be convenient for the Court to examine the awl itself, have you any objection to stating on the record its diameter or distance through?

*Ans.* I have no measuring instruments here. I should say it was about one-thirty-second of an inch square.

*Cross-Int.* 38. Do you know whether awls are made larger or smaller for ordinary work?

*Ans.* All that I have seen have been substantially like this exhibit. They ought to be as small as possible. It is objectionable to punch a hole any bigger than is necessary.

*Cross-Int.* 39. In the prior mechanisms to which you made reference I understand you to say that the burden of the work involved in cutting the slit was borne by the awl; am I right?

*Ans.* I simply referred to a hypothetical case for the purpose of affording a standard of comparison. In accordance with my hypothesis the burden would be borne by the awl.

*Cross-Int.* 40. Then, as I understand you now, you do not wish

to convey the idea to the Court that as a fact the awl has been called upon to sustain the burden of the feed?

*Ans.* Certainly the awl does bear the burden of the feed; that is what it is for. It is the feeding instrumentality in the machine.

*Cross-Int.* 41. And does it bear such burden when it is inserted in the material as far as it will enter, or is it at some intermediate point?

*Ans.* When it has entered the material as far as it goes.

*Cross-Int.* 42. Then after it has completed its entering stroke it moves laterally, does it?

*Ans.* Yes.

*Cross-Int.* 43. So that the feeding burden is applied when the larger and stronger portion of the awl is in the work; am I right?

*Ans.* No; the awl never penetrates the work far enough to bring that larger portion into the leather.

*Cross-Int.* 44. Using Defendants' Exhibit 111 for illustration, will you kindly state how far the shank of the awl projects from the supporting mechanism, or, in other words, where the awl proper begins and where the shank leaves off?

*Ans.* As I understand the question, you refer to the larger portion of the awl as the shank, and the rest of it as the awl proper. I will have to guess at the measurement because I have no instruments. I should say the full width of the shank extends about one-tenth of an inch beyond the carrier or support. There is then a taper for about one-sixteenth of an inch more; then there is about a half an inch of the awl proper until the bevel point is reached. The bevel is longer on one portion of the awl than on the other, perhaps one-sixteenth of an inch on one side and one-thirty-second on the other. These measurements are, of course, mere estimates, as I have no way of verifying them.

*Cross-Int.* 45. Will you state to the Court what particular machine you have personal knowledge of where the awl gave or bent or flexed while feeding the material, resulting in imperfect work?

*Mr. PHILLIPS.* Objected to as not pertinent to any matter touched upon in the direct examination of this witness, and outside the order of the court.

*Ans.* So far as my observation has gone, when the awl has been used as the work feeder, it has properly acted. I do not for the moment recall any instance of the awl failing to operate properly except when some accident has occurred.

*Cross-Int.* 46. And you say that the cutting stroke would not be of uniform depth and uniform length if it took place when the material was being fed by the awl?

*Ans.* I understand that this question now refers to my hypothesis of the employment of a stationary slitting knife in a high-speed machine. I am entirely confident that the extra work thus put upon the awl would cause such irregularity as to produce irregularity in the length and depth of the cuts. I make this statement upon my general mechanical knowledge.

*Cross-Int.* 47. And the fact that machines had operated successfully for anywhere from ten to twenty years without having incorporated in them the mechanisms to which you have made reference in testifying about lockstitch machine, has no influence in your mind with reference to the question as to whether the operation of the machines without the Plant improvement were successful or not?

**Mr. PHILLIPS.** Objected to as relating to nothing touched upon in the direct examination of this witness, and outside the order of the court.

*Ans.* I don't understand what machine you have reference to as having been used from ten to twenty years.

*Cross-Int.* 48. You know, do you not, that lockstitch machines designed for attaching the welt to the out-sole have been in successful use for twenty years?

**Mr. PHILLIPS.** Objected to as relating to nothing touched upon in the direct examination of this witness, and outside the order of the court.

*Ans.* I did not know that you referred to the ordinary out-sole stitcher. I am familiar with those machines. In those the awl has simply the work to do of feeding the shoe along. Those machines were low-speed machines. The speed being low and the awl having nothing to do except feed the work, it did the work properly.

*Cross-Int.* 49. Do you wish the Court to understand that from your knowledge the mechanism in a lockstitch out-sole machine was not employed successfully until the mechanisms of these Plant patents was incorporated therein, in so far as cutting a groove in the welt is concerned?

Mr. PHILLIPS. Objected to as relating to nothing touched upon in the direct examination of this witness, and outside the order of the court.

*Ans.* No.

*Cross-Int.* 50. Can you state when mechanisms were first incorporated in out-sole lockstitch machines adapted for cutting a channel in the welt as it was being attached to the out-sole?

Mr. PHILLIPS. Objected to as relating to nothing touched upon in the direct examination of this witness, and outside the order of the court.

*Ans.* No.

*Cross-Int.* 51. It is a fact within your knowledge, is it not, that such devices were used prior to the date of the Plant patents?

Mr. PHILLIPS. Objected to as relating to nothing touched upon in the direct examination of this witness, and outside the order of the court.

*Ans.* No.

*Cross-Int.* 52. Have you any practical knowledge of what was used to cut such channel before the incorporation of the alleged improvement of the Plant patent?

Mr. PHILLIPS. Objected to as relating to nothing touched upon in the direct examination of this witness, and outside the order of the court.

*Ans.* No.

*Cross-Int.* 53. So that, so far as the particular subject-matter under discussion is concerned, you have no practical knowledge of the operation of the machines and no practical knowledge or experience as to what defects, if any, did in fact exist, have you?

Mr. PHILLIPS. Objected to as relating to nothing touched upon in the direct examination of this witness, and outside the order of the court.

*Ans.* What machine are you talking about now?

*Cross-Int.* 54. Rapid out-sole lockstitch machine, having special reference to the channel-cutting mechanism which operates during the stitching operation.

*Ans.* The only out-sole lockstitch machines having a slitting knife with which I am familiar are lockstitch machines, models K and M. Both of those machines have the improvement of the Plant patents Nos. 940,723 and 940,725.

*Cross-Int.* 55. In testifying concerning nailing machine, American Lightning, you say, among other things: "The purpose of the machine of this Plant patent No. 958,302 is to drive nails into a heel at an angle to the outer or tread face of the heel, as shown in Fig. 14 of the patent drawings. The diagonal driving is especially useful in connection with heels which are inclined forwardly at the rear, as is conspicuously true of the heel of a lady's shoe, and to some degree in practically all shoes." Kindly state whether by that phraseology you mean to say that practically all shoes have their heels attached by nails which are driven through the heels at an angle from the tread face.

*Ans.* No.

*Cross-Int.* 56. Then is it true that very many shoes have their heels attached in such manner that the attaching nails are driven through the heels at right angles to the tread face?

*Ans.* Yes.

*Cross-Int.* 57. And very many heels which are inclined forwardly at the rear are attached with nails which are not driven at an angle with the tread face, are they not?

*Ans.* Yes.

*Cross-Int.* 58. Kindly examine Plaintiff's Exhibit No. 283, and state whether it correctly illustrates, so far as you are informed, the relation of the nail to the heel in the kind of shoe you have made reference to in your testimony in chief.

Mr. PHILLIPS. Objected to as pertinent to nothing in the direct examination of this witness, and outside the order of the court.

*Ans.* Substantially so.

*Cross-Int.* 59. Kindly examine Defendants' Exhibit 350, and

state whether it is a shoe of the character referred to in your direct examination.

Mr. PHILLIPS. Objected to as pertinent to nothing in the direct examination of this witness, and outside the order of the court.

*Ans.* Yes; this is an extreme case.

*Cross-Int.* 60. And do you say that the heel of that shoe, Defendants' Exhibit 350, is attached by the driving of nails in the manner as set forth in the machine of the patent to which you have testified?

Mr. PHILLIPS. Objected to as pertinent to nothing in the direct examination of this witness, and outside the order of the court.

*Ans.* I have not the faintest idea.

*Cross-Int.* 61. Will you examine Plaintiff's Exhibit 281, and state, if you can, whether the heel is attached by having the nails driven at right angles to the tread face, or whether they are driven at an angle?

Mr. PHILLIPS. Objected to as pertinent to nothing in the direct examination of this witness, and outside the order of the court.

*Ans.* It is impossible to tell from the completed shoe how nails have been driven without taking the shoe to pieces. It is useless to show me any more shoes; I cannot tell how any of them have been nailed unless I tear them apart.

*Cross-Int.* 62. Kindly examine Plaintiff's Exhibit 282, and state whether the heel of that shoe is inclined forwardly at the rear.

Mr. PHILLIPS. Objected to as pertinent to nothing in the direct examination of this witness, and outside the order of the court.

*Ans.* It is.

*Cross-Int.* 63. Kindly state whether the shoe examined by you, Plaintiff's Exhibit 282, is the kind of shoe referred to in your testimony when you say: "This diagonal driving is especially useful in connection with heels which are inclined forwardly at the rear."

Mr. PHILLIPS. Objected to as pertinent to nothing in the direct examination of this witness, and outside the order of the court.

*Ans.* It is.

*Cross-Int.* 64. State, if you can, whether the heel of Plaintiff's Exhibit 282 is attached by nails driven diagonally to the tread face.

Mr. PHILLIPS. Objected to as pertinent to nothing in the direct examination of this witness, and outside the order of the court.

Ans. I cannot tell except by such examination as would involve ripping the exhibit apart.

*Cross-Int.* 65. Have you any information as to when this diagonal driving of nails to attach heels to shoes first went into use?

Mr. PHILLIPS. Objected to as pertinent to nothing in the direct examination of this witness, and outside the order of the court.

Ans. No.

*Cross-Int.* 66. So that you have no information as to whether the claims of the Plant patent to which you have testified concerning a machine for driving nails at an angle were in the nature of pioneer claims or not, have you?

Mr. PHILLIPS. Objected to as pertinent to nothing in the direct examination of this witness, and outside the order of the court.

Ans. The claims of this patent which I have discussed do not purport to cover diagonal driving. On the contrary, these claims are directed to means for guiding the drivers into registration with the holes in the nail block and then letting go. So far as I am aware, Plant was the pioneer in doing this.

*Cross-Int.* 67. And is it not a fact, to your knowledge, that heels had been attached to shoes by nails driven at an inclination to the tread face long prior to the alleged invention of Plant patent to which you have testified?

Mr. PHILLIPS. Objected to as pertinent to nothing in the direct examination of this witness, and outside the order of the court.

Ans. No.

*Cross-Int.* 68. Have you any knowledge at all with reference to this?

Mr. PHILLIPS. Objected to as pertinent to nothing in the direct examination of this witness, and outside the order of the court.

Ans. I had seen a great many heel-nailing machines prior to the application date for this Plant patent, but I never saw one which did diagonal driving.

*Cross-Int.* 69. About when, so far as you are able to state, did you see a machine of the character referred to in your last answer?

Mr. PHILLIPS. Objected to as pertinent to nothing in the direct examination of this witness, and outside the order of the court.

*Ans.* From about 1896 or 1897 up to about, say, 1907 or 1908.

*Cross-Int.* 70. And did the machines which you have knowledge of, extending from, say, 1896 to 1907 or 1908, successfully attach heels to shoes such as is shown in Defendants' Exhibit 348?

Mr. PHILLIPS. Objected to as pertinent to nothing in the direct examination of this witness, and outside the order of the court.

*Ans.* I never saw those machines used on heels of the character of this exhibit.

*Cross-Int.* 71. Can you state whether the machines referred to by you, which you have knowledge of as existing between 1896 and 1907 or 1908, were operated successfully for attaching heels in the manner as shown in Plaintiff's Exhibit 282?

Mr. PHILLIPS. Objected to as pertinent to nothing in the direct examination of this witness, and outside the order of the court.

*Ans.* I would not be sure about that. I should say they were more of the kind shown in Exhibit 281.

*Cross-Int.* 72. You do not wish to convey the impression to the Court that heels cannot be attached to shoes as shown in Plaintiff's Exhibit 282 by nails being driven therethrough in a direction at right angles to the tread of the shoe?

Mr. PHILLIPS. Objected to as pertinent to nothing in the direct examination of this witness, and outside the order of the court.

*Ans.* No.

[*The signature of the witness to this deposition is waived.*]

Attest: CHARLES K. DARLING, *Special Examiner.*

[*Adjourned to 10 a. m., Monday, March 23, 1914.*]

BOSTON, MASS., March 23, 1914.

DEPOSITION OF GEORGE E. WARREN.

*Direct Examination by BENJAMIN PHILLIPS, Esq., of Counsel for Defendants.*

*Int.* 1. Your name is George E. Warren, and you testified in open court as a witness on behalf of the defendant, did you not?

*Ans.* I did.

*Int.* 2. I believe you stated that since the organization of the defendant corporation, with the exception of about two years, you had been in the employ of the defendant as a mechanical engineer; is that correct?

*Ans.* It is.

*Int.* 3. Please state what experience you have had since you have been in the employ of the defendant company as a designer of shoe-sewing machines, including out-sole stitching machines.

*Ans.* I have been constantly employed in that capacity.

*Int.* 4. Did you take any part in the designing of the machines which have been referred to in this record as lockstitch machines, Goodyear outsole rapid, models K and M?

Mr. WEBSTER. Objected to as immaterial.

*Ans.* They were designed under my direction.

*Int.* 5. Mr. Chapman, a witness called on behalf of the petitioner, has testified in regard to the so-called fudge-stitch mechanism embodied in lockstitch machine, model M. Please describe briefly the operation of lockstitch machine, model M, embodying this mechanism, with particular reference to the co-operation of such mechanism with the other operating parts of the machine.

Mr. WEBSTER. Objected to as immaterial, irrelevant and as not admissible by way of surrebuttal.

*Ans.* This device is arranged on the model M stitcher to cut a slit in the welt, of uniform depth, without imposing this duty on the awl. The knife projects above the work table a sufficient distance to cut the slit of such a depth that the stitches will be concealed. The knife is attached to a holder mounted on the frame of the machine and is so connected by levers and links with the feed

slide that the knife has whatever movements the feed slide and awl have. While the awl is through the leather and feeding the work, the slitting knife moves with it in the same direction, and after the awl is withdrawn from the work and making its idle return movement the slitting knife moves back with it and cuts a slit in the welt while the shoe is firmly clamped between the work table and presser-foot.

*Int. 6.* What is the importance, from the standpoint of a practical designer, of machines of this class, of so organizing the model M stitcher that in producing a fudge-stitch seam it will operate as you have just described?

*Ans.* The importance is that a slit will be cut in the welt, of uniform depth, and the awl will not have the added duty of dragging the shoe against the slitting knife to do the cutting. The awl is a very slender instrument and besides puncturing the hole in the stock is used to feed the shoe, which is on a last, along for each stitch. In high-speed machines like the model M, it was a serious problem to feed the work along so that the stitches would be of uniform length, and the needle must be able to enter the awl hole in the proper manner, so that the stitch-handling devices will be properly operated.

In order to get this uniform length of stitch and also have the needle properly enter the awl hole it was necessary to have the work so relieved during the feeding operation that the awl would have a minimum amount of work to do. To accomplish this it was found necessary to lift the presser-foot at each feeding operation so that the shoe would not have the friction on the work table and the presser-foot. While the presser-foot is so lifted and the work is fed along by the awl, it is found practically impossible to cut a slit in a welt, of uniform depth, because the tendency of the knife is to lift the work from the work table, and as it was found necessary, in order to get the high speed which was desired, to lift the foot from the work, it was necessary to arrange the slitting knife so that it would cut the slit while the work was securely held. Accordingly it was so arranged that the slitting knife would advance with the awl while the awl was feeding the work. Then

it does the cutting during the idle return movement of the feed slide and awl, while the work is securely clamped between the table and the presser-foot. Accordingly a uniform depth of slit was obtained and the awl had only the duty of puncturing the work and feeding it along.

*Int. 7.* Will you please state whether or not the fudge-stitch mechanism embodied in model K stitcher was the same as that embodied in model M, and whether or not its relation to the operation of the presser-foot was the same?

*Ans.* Its operation was exactly the same, and also its relation to the presser-foot.

*Int. 8.* Please state whether or not at the request of counsel for the United States certain machines were placed at the disposal of counsel for the United States and his expert at the office of the defendant in the Albany Building, 89 Beach Street, Boston.

*Ans.* Yes.

*Int. 9.* Will you please give a list of such machines? If they were Plant machines, indicate that fact in the list, and if they were machines put out by the United Shoe Machinery Company, also indicate that fact.

*Ans.* The following is a list of the Plant machines placed at their disposal: —

#### PLANT MACHINES.

Upper clicking machine.

Double lip channel opener.

Single lip channel opener and edge compressor.

Innersole flexor.

Innersole cloth tucker and lip trimmer.

Sole rounder.

Grinder.

Top-lift compressor.

Puller over and tip measurer.

Rapid side laster.

Toe and heel laster.

Turn heel laster.

Staple tacker.

Heel seat nailer.  
 Welt slasher and groover.  
 Tack puller and baster.  
 Welter.  
 Custom sole layer.  
 Rough rounder.  
 Heel seat dinker.  
 Shoe channeler.  
 Stitcher.  
 Loose nailer.  
 Leveler.  
 Heel loader.  
 Heeler.  
 Heel attacher on wood lasts.  
 Heel slugger.  
 Heel breaster.  
 Stitch indenter and burnisher.  
 Stitch separator.  
 Top-lift scalloper.  
 Heel waxer and burnisher.  
 Seat beader.  
 Treeing machine.  
 Bresnahan automatic sole-molding machine.  
 Keighley inseam trimmer.

And the following is a list of the United Shoe Machinery Company's machines :—

#### UNITED SHOE MACHINERY COMPANY'S MACHINES.

Lockstitch machine, model M, Goodyear outsole rapid.  
 Shoe machine, model K, Goodyear welt and turn.  
 Channeling machine, Goodyear Universal (turn work).  
 Grooving and beveling machine, Goodyear power welt.  
 Indenting and burnishing machine, Goodyear welt.  
 Lasting machine, No. 5, U. S. M. Co.  
 Leveling machine, model B, Hercules.  
 Loading and attaching machine, model B, McKay automatic heel.

Nailing machine, American Lightning.

Pulling-over machine, model B, Rex.

Rounding and channeling machine, model E, Goodyear Universal  
Wheeling machine No. 2, Goodyear impression stitch.

Rounding machine, Goodyear heel seat (2 machines).

*Int.* 10. Please state whether or not the list of machines above stated by you includes all the machines referred to in Defendants' Exhibits 273 and 274.

*Ans.* All, with the exception of three machines, which I explained to Mr. Chapman it was not practical to have there, but they could be shown him in nearby shoe factories where they were in operation.

[*It is stipulated and agreed that counsel for defendants and his expert, Mr. Chapman, were given ample opportunity for the examination of all the machines in the lists heretofore given by this witness.*]

*Int.* 11. Please state whether or not you personally pointed out and explained to Mr. Chapman any of the machines in the lists which you have just stated on the record. If yes, please give a list of the machines which you so pointed out and explained.

*Ans.* Yes; I pointed out and explained the following Plant machines: —

#### PLANT MACHINES.

Upper clicking machine.

Double lip channel opener.

Single lip channel opener and edge compressor.

Innersole flexor.

Innersole cloth tucker and lip trimmer.

Sole rounder.

Grinder.

Top-lift compressor.

Puller over and tip measurer.

Rapid side laster.

Staple tacker.

Heel seat nailer.

Welt slasher and groover.

Tack puller and baster.

Welter.

Custom sole layer.  
 Rough rounder.  
 Heel seat dinker.  
 Shoe channeler.  
 Stitcher.  
 Leveler.

And the following machines made by the United Shoe Machinery Company :—

**UNITED SHOE MACHINERY COMPANY'S MACHINES.**

Channeling machine, Goodyear Universal (turn work).  
 Indenting and burnishing machine, Goodyear welt.  
 Leveling machine, model B, Hercules.  
 Loading and attaching machine, model B, McKay automatic heel.  
 Lockstitch machine, model M, Goodyear out-sole rapid.  
 Nailing machine, American Lightning.  
 Pulling-over machine, model B, Rex.  
 Rounding and channeling machine, model E, Goodyear Universal.  
 Shoe machine, model K, Goodyear welt and turn.  
 Wheeling machine No. 2, Goodyear impression stitch.

*Int.* 12. Please state whether or not Mr. Chapman examined the machines which you pointed out and explained to him, and compared them with any United States Letters Patent.

*Ans.* He did.

*Int.* 13. Were you present during the taking of Mr. Chapman's deposition before the examiner?

*Ans.* I was.

*Int.* 14. Mr. Chapman referred to the United Shoe Machinery Company's machines with regard to which he testified as having been shown to him by Mr. Warren. Are you the Mr. Warren to whom he referred?

*Ans.* I am.

*Int.* 15. Did you show Mr. Chapman the machines with regard to which he testified?

*Ans.* I did.

*Int.* 16. Mr. Browne, an expert called on behalf of the defend-

ants, testified that he examined certain machines at the office of the United Shoe Machinery Company, Albany Building, Boston. Were you present when Mr. Browne examined such machines?

*Ans.* I was.

*Int.* 17. Please give the official titles of the machines examined by Mr. Browne.

*Ans.* Lasting and attaching machine, model B, McKay automatic heel.

Nailing machine, American Lightning, No. 3070.

Lockstitch machine, model M, Goodyear outsole rapid, No. 927.

Indenting and burnishing machine, Goodyear welt.

Pulling-over machine, model B, Rex.

Wheeling machine No. 2, Goodyear impression stitch, No. 986.

*Int.* 18. Please state whether or not these were the same machines that you showed to Mr. Chapman and which he has referred to in his testimony under the same titles.

*Ans.* They were the same machines.

*Int.* 19. Have you examined the photographs of the pulling-over machine, model B, Rex, produced by Mr. Browne and offered in evidence as "Defendants' Exhibits Nos. 352" and "353"?

*Ans.* I have.

*Int.* 20. Please state whether or not these photographs are photographs of the machine which you showed to Mr. Chapman and which he referred to in his testimony as "Pulling-Over Machine, Model B, Rex".

*Ans.* One photograph shows pulling-over machine with a shoe in position; the other one, Defendants' Exhibit 352, is the same machine without the shoe. Mr. Chapman saw the machine without the shoe, as shown in Defendants' Exhibit 352. Both photographs show the gaging mechanism which is part of a machine.

*Int.* 21. Mr. Browne also showed a photograph which was offered in evidence as "Photograph of Loading and Attaching Machine, Model B, McKay Automatic Heel, Defendants' Exhibit 355". Please state whether or not that photograph is a photograph of a machine like loading and attaching machine shown by you to Mr.

Chapman and referred to by him as "Loading and Attaching Machine, Model B, McKay Automatic Heel".

*Ans.* This photograph, Defendants' Exhibit 355, is a photograph of our commercial loading and attaching machine, model B, McKay automatic heel, and is exactly the same as the machine shown to Mr. Chapman, with the exception that this photograph has a brush for putting oil on the drivers, which was not on the machine shown to Mr. Chapman.

*Int.* 22. Mr. Browne produced two sheets of drawings of indenting and burnishing machine, Goodyear welt, which were offered in evidence as "Defendants' Exhibit 354". Please state whether or not those drawings correctly represent the indenting and burnishing machine shown to Mr. Chapman, which he referred to in his testimony as "Indenting and Burnishing Machine, Goodyear Welt".

*Ans.* These drawings correctly represent the machine referred to by Mr. Chapman.

*Int.* 23. Were you present while Mr. Nelson W. Howard was testifying in this case before the examiner?

*Ans.* I was.

*Int.* 24. Have you read the printed record of Mr. Howard's deposition given before the examiner, found on pages 2239 to 2663, inclusive?

Mr. WEBSTER. Objected to as utterly immaterial.

*Ans.* I have.

*Int.* 25. Are you familiar with, and can you identify, the machines referred to by him in that portion of his testimony which I have just referred to?

Mr. WEBSTER. Objected to as immaterial.

*Ans.* I am, and can.

*Int.* 26. Mr. Howard, at the request of counsel for the petitioner and during the taking of the testimony under the order of the court under which this testimony is taken, produced photographs illustrating a number of machines referred to by him in that portion of his testimony found in the printed record, pages 2239 to 2663, inclusive. Do said photographs illustrate all the machines

referred to by Mr. Howard in the portion of his testimony just referred to?

Mr. WEBSTER. Objected to as utterly immaterial and as not admissible by way of surrebuttal.

Ans. No, sir.

Int. 27. Have you prepared, and can you produce, a collection of photographs illustrating all of the United Shoe Machinery Company's machines referred to by Mr. Howard in his deposition, printed pages 2239 to 2663, inclusive?

Mr. WEBSTER. The same objection repeated.

Ans. I have, and do produce a collection of photographs of United Shoe Machinery Company's commercial machines referred to by Mr. Howard in the portion of his testimony referred to in the question. Some machines referred to by Mr. Howard were obsolete at the time of the filing of the bill herein, and photographs of some of those machines are not in this volume.

Under the name of each machine there is a date given when the machine was first put out by the United Shoe Machinery Company. In some places there are two dates, which indicate that the machine was first put out at the first date, but was replaced on the second date by a later type or model.

An instance of this is channeling machine, Goodyear turn and insole, page 13. These dates are the dates that were stated in Mr. Howard's testimony.

Some of the photographs which show the present commercial machines include many improvements over the machines first put out, as explained in Mr. Howard's testimony. Examples of those machines that have been improved would be lasting machine, Consolidated hand method, McKay, page 29; loading and attaching machine, McKay automatic heel, page 45.

[*The collection of photographs just produced by the witness is offered in evidence as United Shoe Machinery Company's machines referred to in N. W. Howard's deposition, record pages 2239-2663, as "Defendants' Exhibit 356."*]

Mr. WEBSTER. The introduction of the exhibit offered is objected to as inadmissible by way of rebuttal.

*Cross Examination by ALLEN WEBSTER, Esq., of Counsel for  
THE UNITED STATES.*

*Cross-Int.* 28. You have testified at some length with reference to your experience concerning stitchers and mechanism employed in the models M and K rapid stitchers for cutting a channel in the welt for producing what is known as a fudge stitch. Will you kindly state whether your experience has been sufficient to give you a knowledge as to what mechanisms were used to produce a like result in stitchers prior to the model M stitcher?

Mr. PHILLIPS. Question objected to as touching upon nothing referred to in the direct examination of this witness, and outside the order of the court.

Mr. WEBSTER. Counsel for complainant respectfully calls attention to the fact that it goes to the witness' experience.

*Ans.* I am familiar with some of the devices that have been used on other machines for slitting a welt.

*Cross-Int.* 29. Will you explain how these differ from the construction of the device you have testified to with reference to the model M machine?

Mr. PHILLIPS. Question objected to as touching upon nothing referred to in the direct examination of this witness, and outside the order of the court.

*Ans.* One device which I am familiar with consists of a stationary knife, and every time the awl feeds the work along the cutting is done by the awl dragging the work against the cutting knife.

*Cross-Int.* 30. What other one have you knowledge of?

Mr. PHILLIPS. Question objected to as touching upon nothing referred to in the direct examination of this witness, and outside the order of the court.

*Ans.* Several types, all having a stationary knife, I am familiar with; all applied to the same machine.

*Cross-Int.* 31. And in such several prior devices to which you have made reference was the whole burden of the work placed on the awl?

Mr. PHILLIPS. Question objected to as touching upon nothing

referred to in the direct examination of this witness, and outside the order of the court.

*Ans.* If you mean by that the work of cutting a slit, yes.

*Cross-Int.* 32. And do you say that such channels were never before cut successfully and satisfactorily until the fudge-stitch channel mechanism employed in the model M machine was used?

Mr. PHILLIPS. Question objected to as touching upon nothing referred to in the direct examination of this witness, and outside the order of the court.

*Ans.* Such mechanisms which I referred to I never saw only on machines which ran at a comparatively low speed; that is, about 375 revolutions per minute, and while they were used successfully, because it was the best thing there was, the device which is now in use on the model M stitcher, running over 500, would have been an improvement even on a machine running at 375.

*Cross-Int.* 33. Now, as touching the question to which you have referred as to successful operation, for how many years back did the device for cutting the channel operate with the machine which ran, as you say, 375 stitches per minute?

Mr. PHILLIPS. Question objected to as touching upon nothing referred to in the direct examination of this witness, and outside the order of the court.

*Ans.* I think such devices have been in extensive use since 1907 or 1908.

*Cross-Int.* 34. Will you kindly state whether the channel-cutting mechanism to which you have testified as applied to rapid stitchers is a permanent part of the machine or fixture to be attached to the machine or detached as desired?

Mr. PHILLIPS. Question objected to as touching upon nothing referred to in the direct examination of this witness, and outside the order of the court.

*Ans.* The device is incorporated and organized as a part of the machine. Of course, if they do not desire to make a fudge stitch, the knife can be removed, but the rest of the mechanism stays in place.

*Cross-Int.* 35. Has it, or has it not, been common to provide a

welt with the channel already cut to receive the stitching for the producing of the fudge stitch?

Mr. PHILLIPS. Question objected to as touching upon nothing referred to in the direct examination of this witness, and outside the order of the court.

*Ans.* You mean before the shoe is presented to the stitching machine?

*Cross-Int.* 36. Yes.

*Ans.* I never heard of its being done.

*Cross-Int.* 37. Will you kindly state whether there was among the machines in the room where the machines were allowed to be examined by defendants' expert a machine having a measuring device or rod thereon similar in appearance to the part marked "109" in Figure 1 of patent to Heys No. 957,955, dated May 17, 1910, a copy of which patent I now hand you?

*Ans.* There was a machine that had a rod similar to this.

*Cross-Int.* 38. Is it not a fact that it was practically impossible for Mr. Chapman or anyone else to examine some of the machines pointed out to him by you and obtain a practical knowledge of the operation of the machines because of the fact that the machines were at rest?

Mr. PHILLIPS. Question objected to as calling for mere guess work on the part of the witness as to Mr. Chapman's ability to understand a machine, and as improper cross-examination.

*Ans.* Some of the machines, for instance model K welter and model M stitcher, Mr. Chapman said he could not quite see the operation of the stop motion, and it was asked by Mr. Chapman if they could not be seen in some factory. I suggested that we go to the factory of George E. Keith, which was nearby, where we could see both machines in operation. I believe Mr. Chapman asked where it was, and I told him in South Boston, and it would take us only a short time to go there; but I heard nothing more in regard to that. One or two of the other machines were very difficult to turn over, and I suggested to Mr. Chapman that I could get a man who would come in and help me move the machine

around so that it could be turned over by hand, but he thought it was hardly worth while.

*Cross-Int.* 39. Some of the machines pointed out by you to Mr. Chapman were lacking some of their parts, were they not?

*Ans.* I think there were some. I remember particularly a Plant heel seat dinker, which I explained had some parts missing, but it was a machine with four operating knives when complete, and only one or two of the knives were in commission, so that the machine as a whole had some parts missing.

*Cross-Int.* 40. Is it not a fact that you found it impossible to operate some of the machines; that is, to turn them over and show the mechanism in operation?

*Ans.* I did, as explained in my last answer but one, and offered to get a man who would assist me so that they could be operated.

*Cross-Int.* 41. How about the rough rounder?

*Ans.* The Plant rough rounder was such a machine.

*Cross-Int.* 42. You could not make it work, could you?

*Ans.* Not the particular feature which Mr. Chapman wished to see, but I offered to have a man there the next morning so that I could show the machine in operation, but Mr. Chapman said it would not be necessary.

*Cross-Int.* 43. There was no shafting or power in the room connected up with the machines, was there?

*Ans.* No, sir.

*Cross-Int.* 44. Were any of the photographs in Defendants' Exhibit 356, entitled "United Shoe Machinery Company's Machines referred to in N. W. Howard's Deposition", made from any of the machines in the office building of the United Company where the machines were submitted for inspection of complainant's expert?

*Ans.* I don't feel sure about that in every case, but I think in nearly all cases they were not made from machines in that room.

*Direct Examination resumed by Mr. PHILLIPS.*

*Int.* 45. What machine was it that had the part like the part designated by the reference numeral "109" in Heys patent No. 957,955?

*Ans.* It was the Plant pulling-over machine.

*Int.* 46. Referring to heel seat dinker, I believe you stated that it was provided with four sets of cutting mechanisms or knives. Were any of the mechanisms incomplete?

*Ans.* Yes; one or two of them.

*Int.* 47. And how did those compare with those which were complete?

*Ans.* There were parts missing; they were the same as the complete ones, as far as they went.

*Int.* 48. That is to say, it was a mere duplication of mechanism?

*Ans.* That is correct.

*Int.* 49. Referring to the model M stitcher and the model K welter, besides offering to show Mr. Chapman those machines in operation, did you do anything else to enable him to get a full understanding of the construction and mode of operation of said machines?

*Ans.* I explained them to him as well as I could, and in the case of the model K welter I had all the parts of the stop motion taken apart for his inspection.

*Int.* 50. From what were the photographs contained in Defendants' Exhibit 356 taken?

*Ans.* They were taken from machines at the Beverly factory. I do not know that every one of them was, but I think nearly all were.

*Int.* 51. In so far as the photographs in the collection of photographs referred to bear the titles of the machines stated by you in the lists of machines which were open to the inspection of counsel for the Government and his expert, how do the machines illustrated in these photographs compare with machines referred to by you in said list?

*Ans.* They are practically the same.

*Int.* 52. Please state whether or not the photographs in said Defendants' Exhibit 356 are photographs of regular commercial machines put out by the United Shoe Machinery Company.

*Mr. WEBSTER.* Objected to as leading.

*Ans.* They are.

*Int.* 53. Please state whether or not the machines referred to by you in your list as being machines of the United Shoe Machinery Company are regular commercial machines put out by that company.

*Ans.* They are.

*Int.* 54. Please state whether or not they are illustrated by photographs contained in the collection which you have produced and which has been offered in evidence as Defendants' Exhibit 356.

*Ans.* They are.

*Cross Examination resumed by Mr. WEBSTER.*

*Cross-Int.* 55. You say that the photographs in Defendants' Exhibit 356 are photographs of commercial machines; please state when these photographs were made.

*Ans.* I don't know in every case when they were made. Some of them were made quite recently.

*Cross-Int.* 56. Then you were not present when the exposures for the photographs were made?

*Ans.* I was not.

*Cross-Int.* 57. Then you have no knowledge as to when the photographs were in fact made?

*Ans.* No; I did not see them made.

*Cross-Int.* 58. You have testified that you took apart the parts of the stop-motion mechanism of the welter and showed the same to Mr. Chapman; is it not a fact that you at the same time, or substantially the same time, while explaining these machines stated that the machines did not contain the so-called Plant stop-motion mechanism?

**Mr. PHILLIPS.** Question objected to as outside the order of the court and as bearing on nothing referred to either in the direct or redirect examination of this witness.

*Ans.* I don't remember saying whether it embodied the Plant stop motion or not. I simply described the mechanism in that machine.

*Cross-Int.* 59. Did you not at that time point out that the stop-

ping mechanism was operated, in both the welter and stitcher, by an independent driving mechanism?

*Ans.* I stated that there was a constantly running member in both of the stop motions.

*Cross-Int.* 60. Did you not state it was entirely independent of the driving mechanism?

*Ans.* I stated that there was a constantly running member in both of the stop motions.

*Cross-Int.* 61. Did you not state it was entirely independent of the driving mechanism of the machine?

*Ans.* It was driven entirely independent.

*Cross-Int.* 62. And did you not state there was no spring mechanism incorporated therein to bring about the reverse motion?

*Mr. PHILLIPS.* This line of examination is objected to on the ground that it refers to nothing in the direct or redirect examination of this witness.

*Ans.* I don't remember what I stated, but in looking at the parts, after it was taken apart, it could be easily seen that there was no spring arrangement such as you refer to.

*Cross-Int.* 63. Is it not a fact that some of the machines pointed out by you were stated by you as being obsolete and inoperative?

*Mr. PHILLIPS.* This line of examination is objected to on the ground that it refers to nothing in the direct or redirect examination of this witness.

*Ans.* You mean the Plant machines, or the United Shoe Machinery Company's machines?

*Cross-Int.* 64. Any of them?

*Mr. PHILLIPS.* This line of examination is objected to on the ground that it refers to nothing in the direct or redirect examination of this witness.

*Ans.* I did state that some of the Plant machines were not commercial.

*Direct Examination resumed by Mr. PHILLIPS.*

*Int.* 65. Will you please give the titles of the photographs in Defendants' Exhibit 356 which illustrate the United Company's machines which were submitted to counsel for the Government and

2836 (170) ADDITIONAL EVIDENCE FOR DEFENDANTS.

his expert for examination, as stated in the lists heretofore given by you, and the number of the several pages on which such photographs are found in said exhibit?

Mr. WEBSTER. Objected to as not admissible under redirect examination.

<i>Ans.</i> Lockstitch machine, model M, Goodyear out- sole rapid . . . . .	page 47
Shoe machine, model K, Goodyear welt and turn . . . . .	page 78
Channeling machine, Goodyear Universal (turn work) . . . . .	page 14
Grooving and beveling machine, Goodyear power welt . . . . .	page 24
Indenting and burnishing machine, Goodyear welt . . . . .	page 25
Lasting machine No. 5, U. S. M. Co. . . . .	page 34
Leveling machine, model B, Hercules . . . . .	page 43
Loading and attaching machine, McKay automatic heel . . . . .	page 45
Nailing machine, American Lightning . . . . .	page 53
Pulling-over machine, model B, Rex . . . . .	page 64
Rounding and channeling machine, model E, Good- year Universal . . . . .	page 72
Wheeling machine No. 2, Goodyear impression stitch, . . . . .	page 105
Rounding machine, Goodyear heel seat . . . . .	page 73

[The signature of the witness is waived.]

Attest: CHARLES K. DARLING, *Special Examiner.*

[Adjourned subject to call.]

BOSTON, MASS., March 24, 1914.

Mr. PHILLIPS. For the convenience of the Court, counsel for defendants offers in evidence two volumes of patents identified in Defendants' Exhibit 341 [*Exhibit 341 introduced in evidence page 4944 printed record*], and said volumes are marked "Volume 1, Patents named in Defendants' Exhibit 341, Defendants' Exhibit 357"; and "Volume 2, Patents named in Defendants' Exhibit 341, Defendants' Exhibit 358".

Defendants' counsel also offers in evidence in one volume the patents identified in Defendants' Exhibit 342 [*Defendants' Exhibit 342 offered in evidence page 4944 printed record*], and said vol-

ADDITIONAL EVIDENCE FOR DEFENDANTS. 2836 (171)

ume is marked "Volume of Patents named in Defendants' Exhibit 342, Defendants' Exhibit 359".

So far as at present advised, the defendants have no further testimony to offer before the examiner.

Mr. WEBSTER. Now comes counsel for the complainant and moves that depositions taken in its behalf not already filed, be filed by the examiner with the clerk, so that such depositions may become a part of the record in this cause.

[*Adjourned.*]